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ABSTRACT

A review of current federal programs related to child development is presented in the form of description and analysis of research in fiscal year 1971. Research and developmental plans for fiscal year 1973 are also described with recommendations for the future. Eleven federal early childhood research agencies supported 700 projects in fiscal 1971 with over $88 million. Most of the agencies did most of their work in applied research. Agencies involved were National Institute of Child Health and Human Development; National Institute of Mental Health; Maternal and Child Health Services; Community Services Administration; National Center for Educational Research and Development; Bureau of Education for the Handicapped; Bureau of Elementary and Secondary Education; Bureau of Educational Personnel Development; Office of the Secretary for Planning and Evaluation; and Office of Economic Opportunity. Chapter One is a survey of present knowledge and questions concerning early childhood research and development. Chapter Two gives a description of research in fiscal 1971, giving areas and kinds of research. In the last part the funding, purposes, research areas and kinds of research for each agency are presented. Chapter Three describes research plans for fiscal year 1973. (DJ)

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TOWARD INTERAGENCY COORDINATION:

An Overview of Federal Research and Development Activities Relating to Early Childhood and Recommendations for the Future

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A Report by the Interagency Panel on Early Childhood Research and Development

October, 1971

Toward Interagency Coordination:
An Overview of Federal Research and Development Activities Relating to Early Childhood, and Recommendations for the Future

A Report by the Interagency Panel
on Early Childhood Research and Development

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Participating Agencies

Department of Health, Education and Welfare

- Office of Child Development (OCD)
- National Institute of Child Health and Human Development (NICHD)
- National Institute of Mental Health (NIMH)
- Maternal and Child Health Service (MCHS)
- Community Services Administration (CSA - SRS)
- Office of Education (OE)
  - National Center for Educational Research and Development (NCERD)
  - Bureau of Education for the Handicapped (BEH)
  - Bureau of Elementary and Secondary Education, Follow Through Program (BESE)
  - Bureau of Educational Personnel Development, Early Childhood Training Program (BEPD)
- Office of the Assistant Secretary for Planning and Evaluation (OASPE)

Office of Economic Opportunity (OEO)

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INTRODUCTION

Within recent years, the Nation's approximately 25 million preschool-age children have become the focus of increasing attention and activity by the Federal government. Awareness is growing that the quality of the earliest years of America's children affects the future character of the Nation. Federal involvement in research and action programs concerning young children has been expanding steadily as a result of this focus, and in some areas, such as compensatory education, it is extensive.

The primary beneficiaries of most Federal programs have been the most disadvantaged children -- the poor and the handicapped -- those children whose special needs, until recently, have been most neglected. As a result of Federally-sponsored research and action programs, some aspects of the health, education, and welfare of these and other children have improved appreciably. In other instances, the state of knowledge has been advanced to a degree that will enable action programs in the near future to bring productive changes. However, much work remains to be done -- both for these children, and for others, who also deserve a more healthful and enriching childhood.

The enthusiasm of the Federal effort has not always been matched by clarity of vision or effective implementation concerning the real needs of all the Nation's children. Despite some efforts at informal coordination, most agencies, until recently, have worked essentially in isolation, with little sense of being part of a larger national effort. Given these limitations, what is noteworthy is not the inadequacies of Federal activities to date, but the amount of progress which has nonetheless stemmed from them.

With the establishment of the Office of Child Development, and the formation of the Interagency Panel on Early Childhood Research and Development, efforts are underway to strengthen Federal research and development activities related to early childhood. Through coordinated planning, and the development of explicit goals toward which agency activities will be directed, it should be possible to enhance each agency's capabilities while focusing the total Federal effort more effectively on the major research needs of the Nation. The overall goal is to improve the quality of life of all children in our country, by establishing the means to provide a fund of knowledge upon which such improvements can be rationally based.

This report, which results from participation by all the member agencies of the Interagency Panel, represents a first step toward the goal of formal interagency cooperation and planning. It surveys present knowledge about early childhood research and development and poses significant questions in priority research areas identified by the member agencies after year-long collaboration. It describes, as well, current efforts (using FY '71 as a baseline year), and planned efforts for FY '73 by those agencies in the areas identified, and outlines future steps for the Interagency Panel.* The result of these first collaborative steps represents a significant new level of coordination and rational planning. Of even more importance, the groundwork has been laid for further progress, including the development of an elaborated interagency research information system and a refined procedure for coordinating Federal research efforts.

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* FY '72 plans were not yet complete enough, on the one hand, to use as a basis for analysis, nor were they still flexible enough, on the other hand, to permit the changes in research plans that might be made in accordance with the analysis of activities and needs presented in this report. Therefore, FY '71 activities are used as the base and FY '73 projections for the analysis of future plans.

I. A Survey of Present Knowledge and Questions Concerning Early Childhood Research and Development

The members of the Interagency Panel, during a year of meetings and deliberations, have brought together information about the state of knowledge concerning children, and have identified questions still needing answers from research. The resulting survey has been organized into specific content areas along generally accepted classifications. This survey now provides a basis for analyzing current and planned research of the participating agencies (see Chapters II and III), and for identifying areas to which future plans will have to be addressed (see Chapters III and IV).

Value Orientation

Underlying the survey is a value orientation about certain general approaches to research in early childhood. These approaches are judged by the Panel members to be the most promising at this point in time for yielding useful and meaningful research results. The approaches described below may be used separately or in combination:

Research which benefits all children. Includes both widely applicable studies whose benefits may accrue to a broad spectrum of children -- healthy, ill and handicapped, of all backgrounds, abilities and classes -- as well as more specifically targeted studies which, taken together, may benefit many kinds of children.

Longitudinal research. These are studies which trace changes over months, weeks, and years, and show how events (whether "natural" or experimental interventions) during certain points in childhood affect characteristics seen later in childhood, or even later in life.

Holistically oriented research. This includes two types of studies:

a. Research on the "total child"-that is, studies which emphasize the effects of events and stimuli on the child seen as a whole person whose physical, social, emotional, and intellectual development processes interact; (as well as combinations of studies which together clarify the interrelations among these aspects of the child).

b. Research on the "total life space" of the child- that is, studies which, singly or in combination, examine the influence of a range of interacting environmental variables upon the developing child: elements in the immediate physical and social environment (i.e. the family, the house and neighborhood, peers, friends, and the school), as well as the interacting cultural values and institutions of the larger social milieu.

Policy-related research. Includes studies which provide an objective basis for social policy development, either by identifying essential causal connections between social problems and the conditions underlying them, or by comparing and evaluating the relative merits of various intervention programs to discover which of several approaches provide the most effective solutions to a given problem.

Studies to improve the research process itself. Three types of studies are included:

a. Goal-oriented research. Studies which are aimed at identifying appropriate goals for child development, that is, which specify the kind of children and adults desired, and indicate goals for early childhood research which have a functional relationship to the goals spelled out for children's development. One important research goal is to study the connections between the characteristics of children, events during childhood, and adult outcomes. Such studies are essential if desirable adult characteristics

(whatever they may be) are to be fostered during childhood.

b. Methodological improvement. Studies which provide new ways to measure child characteristics, program characteristics, and the changes over time in children, whether a result of natural influences or brought about by experimental interventions.

c. Information communication and dissemination. Studies which suggest improved ways of disseminating the results of research to those who can benefit from them, both professionals and laymen, as well as studies which contribute to establishing more effective communication between basic and applied researchers

Content Areas of Research

The survey of present knowledge and questions concerning early childhood research and development is arranged into the following content areas:

1. Child Development
2. The Impact of the Primary Environment
3. The Impact of Community and Broader Intervention Programs

These areas include information about what we already know as well as relevant questions to chart the future course of research. This information and these pertinent questions provide the framework for assessing in later chapters current and planned Federal research efforts and for determining areas which need additional research

Child Development

While research on the developmental process is finally oriented toward considering the child as a total entity, investigation traditionally has been organized around three major aspects of child development which will be considered separately. They are the cognitive, social-emotional, and physical processes of development.

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a. The Development of Cognitive Ability in Children. A primary question essential to understanding man's special capacity for logical and creative thought and language concerns the origins of perceiving, thinking, and communicating in young children. Although considerable research, both basic and applied, has been conducted in this area, many complex problems remain to be considered.

Of particular concern to practitioners and researchers involved in education programs is the question of how children come to generalize their knowledge and skills and apply them in new situations or in learning new skills. Related to this is the question of environmental influences which favor growth in such essential areas as the emergence of problem-solving ability, and including the development of attentional capacity, memory, and flexible, creative styles of problem solving.

The acquisition of symbol-using behavior, particularly linguistic ability, must be given far greater study: how do children learn and what are the factors that inhibit or facilitate the full development of skills needed to produce and comprehend language, whether spoken or written?

Individual differences in learning patterns and cognitive styles have received some attention but need to be more thoroughly studied, with greater stress given to developing a variety of educational approaches most appropriately matched to different styles. This is especially important in developing curricula for special groups, such as gifted, retarded, bilingual, and poor children, and in recognizing individual variations within any given group. Some curricula which can enhance cognitive development have already been identified; they must be developed, and field tested more fully, and information on effective techniques disseminated more widely.

Another area within the cognitive development realm needing additional

research concerns the "biology of learning," that is, the physiological, biochemical, and genetic factors that underlie learning ability. Considerable progress in preventing and treating certain types of mental retardation has already been made through basic research at this level, and the potential exists for enhancing the learning ability of "normal" individuals as well.

A related area concerns the pursuit of physiological indicators of essential cognitive processes such as perception, particularly in infants. By understanding better how infants respond to the world around them, new methods can be devised to provide development-enhancing stimulation during a period which provides the foundation for all subsequent development.

Although we have some highly developed theories of cognition, we need basic research to resolve discrepancies between or to realign theories of cognitive development (such as those of Jean Piaget or Jerome Bruner) and to make it possible to see how they integrate with theories of social and emotional development.

b. The Social and Emotional Development of Children. This vital aspect of child development has received less attention than the cognitive area. We need to know far more about the factors that affect how intensely, to whom, and when children become attached to others and are influenced by them. The patterns of attachment and dependency between infants and parents --both mothers and fathers -- and their relation to later affective behavior and socialization must be given greater study. Similarly, as the child grows and shifts from the family toward the peer group as a source of attachment, it is essential to understand how peers (and older neighborhood "heroes") influence one another's behavior, and how their influence can be encouraged in constructive directions, especially in educational settings.

Another important area concerns studies that identify how children's imitation and play affect the formation of their social identities. A basic and essential question in this area of socio-emotional development concerns the way "prosocial" and "antisocial" behaviors develop. For example, what are the sources of aggressive behavior, and what do role models (whether parents, peers or television characters) play in encouraging it? Similarly, what is the natural development of children's moral and ethical behavior, and what is the process by which they shift from being egocentric to being relatively altruistic? How do children's value systems develop? Which techniques for behavior change are most effective in encouraging constructive behavior, and what improved techniques can be developed?

Another very basic area of investigation concerns the way children's self-images develop, as well as their sense of confidence and self-worth and their capacity for self-regulation (i.e., tolerating frustration and delaying gratification). These aspects of ego development underlie a child's ability to perform up to capacity, to grow as a person, and to master the diverse social and intellectual skills needed to function well in our society. Two aspects of the development of individual identity are particularly important and often problem-ridden in contemporary society: the establishment of sexual identity and, particularly in the case of minority-group members, the establishment of racial or ethnic identity. More extensive research must be carried out to understand what it means to be a man or woman in our society, and to identify both biological and cultural factors affecting how children develop their sex-role behaviors. In a related vein, the meaning of being a black or Chicano child in America, and the factors enhancing or impairing development of pride in one's identity must be given greater study, as must the origins of racism and prejudice. Another essential area for

greater study is that of motivation. We need to understand what motivates people, especially young children, to use their fullest capacities, and must understand as well what impedes motivation.

As we become more aware of the value of early prevention, detection, and treatment of mental illness, the need grows for more research on the origins of emotional disturbance in children, and for studies concerned with short-and long-term effects of established and experimental forms of therapy for children. The search for effective, short-term and relatively inexpensive forms of therapy should continue, and greater emphasis should be given to developing techniques of very early intervention, which may prevent emotional illness from developing.

c. Children's Physical Development. Concerning the physical growth and development of children, several questions deserve intensified study, particularly those related to prenatal and perinatal development. Since the stage for all subsequent development is set prenatally, it is essential to understand more fully how genetic and maternal-environmental events interact to affect normal and abnormal fetal development. Another critical problem area concerns the causes and prevention of premature birth and birth defects, phenomena often correlated both with infant mortality and retarded physical and mental development. Although many major causes of infant mortality and morbidity in the U.S. are and have been under investigation, our Nation still lags far behind most other advanced countries in overcoming these problems. The effects of maternal and child nutrition on pre- and postnatal development, as well as the preventive and therapeutic effects of nutritional supplementation deserve greater study.

Multi-disciplinary research is recommended to combine information from various disciplines to help avoid aberrations in the biological foundations

of life. Also we need more long-term, broad-scale studies which trace normal and abnormal patterns of physical and physiological development among large populations of children over time. At present, knowledge about normal and abnormal physical development is frangmented and incomplete. In addition, although medical research concerns itself with investigating disease entities, there are few studies which show how childhood diseases and other temporary or permanently handicapping conditions affect, other than physiologically, the children who have them.

The Impact of the Primary Environment.

a. The Physical Setting. We are just beginning to realize that elements in the immediate environment in which a child grows up, in both its social and physical aspects, has subtle yet profound effects on all aspects of development. Yet most of the relevant environmental factors remain to be specified. Far more work is needed to identify the effect of urban, suburban or rural life on the very young child, for example, and to show the differential results of growing up in such settings or of moving within or among them. It is particularly important to specify further how ghetto and slum living affects children's physical and mental development. We need to look further into the effects of the man-made environment on all children and determine how the natural environment may be improved as an agent for healthy child development.

b. The Family. The family is the primary source of intellectual stimulation, socialization, affection, nutrition, health care, and other essential ingredients for a young child's growth and humanization. It warrants more study than it has received. Much more investigation is needed of the way family characteristics affect the child's total development. Although family pathology has been given some attention, we particularly need to know

more about those aspects of family functioning that contribute to healthy child development and adult achievement. For example, further studies of particularly competent styles of mothering, or studies of effective fathers need to be encouraged. We need more information on factors which can promote more stable family life, including both strengthening the family structure that already exists, and providing new types of services such as "big brothers" for boys in female-headed households. The effect of socio-economic status, religion and cultural values as well as the marital adjustment of father and mother need study.

Of great current significance is study of the changing role of the family in United States society, as this affects developing children. As mothers tend increasingly to work, as the work-week shrinks for men and women, and as traditional sex roles and attitudes toward child-rearing and family life are being challenged and changed, new individual and institutional responses are needed. At the basic research level, it is essential to understand the structure and functions of characteristic American family patterns, as well as alternative patterns (extended families, collective communes, kibbutzim) and their effects on child development. More anthropological studies providing cross-cultural comparisons are needed. At more applied levels, considerable study is needed of the actual and potential role of emerging social institutions which supplement the family's role (such as day care programs) and their effects on child development.

c. The School. As the young child matures, the formal educational environment of the school is added to the more informal influences of family and neighborhood. Studies should be expanded which delineate how teaching goals and methods, instructional curricula, and the attitudes and values of teachers toward their pupils affect the development of children.

It is important that the information obtained from the variety of compensatory education programs be used not only to adapt educational practices to low-income children, but also to identify those common features which may well be the hallmarks of any good educational program, i.e., individualization and continuity of instruction, and specified goals and learning sequences. It is important to specify the conditons under which individualized instruction is appropriate, and to recognize that for certain types of individuals, and certain kinds of instruction, group teaching may be preferable.

Research must continue to be carried out on school arrangements and on promising innovations in the educational process, such as open schools, which appear to encourage overall child growth and development. Educational programs for special groups (such as the handicapped, mentally retarded, and those needing compensatory education) need improvement. A comprehensive investigation of the formal educational system must consider how special programs can best be coordinated with the general educational system, that is, at what point and for whom is it best to provide separate programs, and under what circumstances and for whom, is it best to encourage integration, supplemented with special programs for special groups?

d. Peers. From four or five years of age up through the middle to late teenage years, the peer rivals the parent or adult as a significant shaper of the child's behavior. For all children, the group's interests, values, and skills have a very large impact on those of the individual. Peers become important as allies in rebellion against the demands of the adult world, as evaluators who give acceptance or rejection, as models for identification, and as a reference group defining status and roles. Even in the preschool age child, peer behavior is imitated and peer approval defines

behaviors to be adopted or ignored. Studies of factors affecting school performance indicate that here, especially, the role of the peer is significant -- sometimes more important than school facilities or staff.

More research is needed on the distinctive roles played by the peer group in influencing the development and achievement of the young child. Further, we need to find out more about how peer influences, both in social and educational situations, can be constructively directed to encourage desirable behavior patterns. Peer teaching and peer modeling, with children at various age levels and from various socio-economic groups, should be explored further. The effects of growing up and of being educated in homogeneous peer groups (by age, religion, socio-economic status, ability, sex) should be compared with exposure to more heterogeneous types of peers. The effects of such backgrounds on the development of prejudice also deserve investigation.

The Impact of Community and Broader Intervention Programs

Within recent years, a number of social intervention programs have been developed, or are being developed with extensive Federal involvement, which have had an appreciable impact on the health and well-being of young children in our country. Some, such as compensatory education, and many types of health care programs, are directed specifically at children; others, such as income maintenance and housing programs, are directed at improving family functions, with children as secondary beneficiaries. Day care programs, originally conceived as a means to permit mothers with preschool children to return to work, are being viewed as intrinsically important for the children themselves. To make these programs as effective as possible for child development, several types of research are needed, ranging from basic studies through long-range evaluations. Ideally,there should be a systematic

progression from limited, exploratory pilot studies based on clear basic research results, through development, demonstration and evaluation, before any widespread large-scale programs are ever launched. In fact, action often precedes the acquisition of basic information, and some widespread programs are initiated before sufficient research or evaluative data are collected. In some instances, where programs have long been underway, questions are now being asked that ideally should have been posed much earlier. (In others, the questions became apparent after launching.) Where other programs are still in the early planning phase, it is urgently suggested that systematic development be encouraged. This is particularly true of day care programs, where we are still at a point where this large-scale social intervention,using available research data,can be designed with the best interests of children in mind. A number of current and planned social programs which affect children are presented here, with special attention to research aspects and possibilities.

a. Child Advocacy Programs. Children in our country are legally protected, yet politically powerless. Given their special social status, as a group they have no single spokesman, no permanent representatives, no lobby, and no voice in the local and national decisions and programs that profoundly affect their lives. Recognizing the need for community-based action-oriented organizations to represent the best interests of all children and help bring about coordinated programs of child services for those who need them, the Joint Commission on Mental Health of Children recommended in 1969 that Federal funding be provided to establish a child advocacy system at every level of society. A similar recommendation was made by the 1970 White House Conference on Children and Youth. These recommendations have resulted in the initiation of pioneering child advocacy demonstration programs in six

communities across the country, under the collaborative sponsorship of the Office of Education and the National Institute of Mental Health.

These programs represent a first step toward answering many of the basic questions concerning the establishment and maintenance of child advocacy mechanisms in a variety of settings. Nonetheless, many research questions remain. For example, how can a child advocacy system best be developed, both locally and nationally, which meets the basic needs of children, insures coordinated preventive and remedial services, and prevents gaps in services? Which models are most effective for which types of communities: "in-house," "adversary," "ombudsman," or others? What types of new services should be provided? What new professional, paraprofessional, and laymen roles need to be developed, and how can training needs best be achieved? These are but a few of the many questions that must be asked and answered in this new and vital area. The evaluation of field studies must be included from the very beginning, so that many of these essential policy-related questions can be answered as soon and as effectively as possible.

b. Child Care and Preschool Education Programs. The goal of providing coordinated services for the health, educational and socio-emotional well-being of all children is still a distant one. Yet there have been numerous experimental Federally-sponsored programs which at least point to some of the major components which should be included in any comprehensive system of child care. Some of these programs are discussed below, from the perspective of research recommended, to make them more effective. In addition, some essential areas for intervention not yet being studied, or studied only minimally, are examined.

As a general research issue concerning the child care system in our

country, it is essential that research attention be given to describing and evaluating the major child care services as they presently exist, both public and private, at local and national levels. Such a survey should examine stated standards for child care facilities, as well as actual practices. From such a baseline, improvements in the system can then be realistically suggested and implemented.

Day Care. One important social intervention program, still largely in the planning stage, is the establishment of day care facilities throughout the country for the children of working mothers. In view of the great national interest in day care services for preschool children, it is imperative that special immediate research attention be given to day care and its potential effects on children and their families. At present, very little is known about the impact of day care experiences on child development.

The potential strengths and dangers of day care programs need to be explored systematically. Research is urgently needed to determine how various amounts of separation from home affect children of different ages. Other issues for study focus on how to select the children most likely to benefit from such programs, on determining the long-range advantages and disadvantages to children and families of various combinations of group day care with home care, and on the long-term effects of attending an ethnocentered vs. an ethnically mixed day care center or nursery. Questions concerning the organization and operation of such programs include: How should recruitment and training be conducted for care-givers who will staff day care centers? What health care arrangements are feasible? What steps are needed to integrate medical and psychiatric services, as well as educational and nutritional services into day care programs? How, and to what degree, should parents be involved in the planning and operation of day care

centers? What are some effectively balanced programs of activities and experiences for children of different ages in day care and preprimary educational settings? What are the long-term effects of various program characteristics on the total development of participating children and their families?

Investigation of such questions, many of which have clear policy implications, might suggest the best design for day care centers to encourage their function as positive catalysts for child development, rather than as parking lots for children. The possible social gains to come out of day care for children of all backgrounds can be reaped only after potential benefits and dangers are understood and accounted for through appropriate studies.

Health Care. Our country is rich in medical and health resources -- both preventive and remedial -- for adults and children alike. There exist a vast array of health services and programs specifically for children, including day care and school health services, maternal and child health programs, as well as programs for the handicapped and mentally retarded. Yet many families, especially the poor, do not receive the benefits of current services and knowledge. We must begin to "pull together the fantastically competent medical resources of the United States into meaningful comprehensive services to young children and their families" (as noted in the recently released volume Day Care: Resources for Decisions, Editor, E. Grotberg).

Support should be given for comparative evaluations of the effects of health care services on maternal and child health at all socio-ecoromic levels. Experiments in alternate innovative methods of delivering health and nutritional services must be expanded, and evaluations in terms of

long-range costs and benefits need to be carried out. The health service system for children should include experimental educational programs for parents concerning accident and illness prevention, nutrition, family planning, and available health resources as well as access points in the health system itself. Another area for systematic exploration is the recruitment and training of paraprofessional and non-professional personnel to staff expanded and improved health delivery systems.

In planning health care (as well as educational) programs for handicapped and mentally retarded children, greater research attention should be given to the attitudes and expectations of community members and caregiving personnel. The personnel must be trained to enhance the child's development within the limits of whatever handicapping conditions exist. Future prevention of many handicapping conditions, such as certain birth defects, and accident-related disabilities, as well as some forms of mental retardation should be possible through a well-integrated program of research which combines basic investigations of the biological causes of many of these conditions, with applied studies of the best ways to strengthen the family and community medical facilities as agents of healthy child development.

Compensatory Education. One of the most extensive social programs in recent years, planned primarily to provide greater educational opportunity for children of the poor, has been that of compensatory education. The Head Start program at the preschool level, and the later Follow Through program at the primary level are the largest and best known government efforts in these areas. Because Head Start programs generally take place in a group care setting, the areas of research for compensatory education are closely related to day care priorities. Since they also are related to basic

cognitive, social, and educational questions, some issues relating to compensatory education programs have already been discussed. However, several methods to improve compensatory programs deserve intensive investigation. For example, we need to specify in research the critical elements of any given compensatory program rather than rely on the global descriptive approach often currently used. Such studies will permit careful analyses of components within programs to determine which parts are most important for child development.

Research studies on compensatory reading programs should include basic investigations of the nature of reading and learning styles, effects of ethnic and native language differences, and the effects of individualized diagnosis and instruction. We know that relationships with adults are critical for child development, and have identified some of their important aspects. We also know some of the behavioral skills that make for effective teachers of very young learners. In order to improve the performance of specially trained parents and of others who serve as tutors of young children, we need to develop and test training methods which will make effective skills available to all teachers who work with preschool children.

Another essential area of investigation concerns ways to make compensatory education programs such as Head Start a better preparation for later educational experiences. In one follow-up study after another, the long-term results of early preschool projects have been discouraging. Reports from infant tutoring programs, Montessori programs, enrichment programs, traditional programs, and structured programs have all indicated that after the children leave the program or enter public school, their initial accelerated rate of academic gain levels off, while non-program

children show a gain that narrows the achievement gap by the end of the first year, and often closes it by the end of the second. Short-range, incomplete educational interventions are unlikely to produce lasting gains. What is needed is a new approach, based on continuous and conceptually integrated education programs. The Planned Variation program of the Office of Child Development attempts to provide such an integrated program from preschool through third grade.

Many interesting and innovative alternatives to compensatory education are being developed as ways of stimulating children's early development. Some methods which are being examined, or should be, include training parents as teachers of their own children at home, preparing older children to teach younger children, educating teens in preparation for parenthood, and combining home care, out-of-home care, and group educational programs in various ways. While promising research is underway in some of these areas, far more is needed, especially that which focuses on the relative costs and benefits of these programs in comparison to full participation in day care or compensatory programs.

c. Educational Television. Television is a presence, for better or worse, in about 95 percent of homes in America. While we know that preschool children have been estimated to watch TV over 30 hours a week, research results are fragmentary and often contradictory concerning the effects of this exposure on the child's total development. Many studies suggest that television is an influential educational force, which can teach a young child useful cognitive skills, social roles, or ways to be violent. Far more research is needed to specify how various kinds of programs, lengths of exposure, and types and ages of children interact to produce changed behavior (of whatever sort) in children, and to identify how long-lasting

these effects are.

The relative success of the Sesame Street program -- developed with extensive Federal support as an experiment in using commercial or educational television as an instruction medium for preschoolers -- provides a preview of the constructive potential of this medium. However, many questions remain: can complex, relatively high-level information be taught through this technique? Can children generalize the information they have learned? How long is the learned content retained?

Another set of questions concerns the negative effects of TV (and EVR) as a one-way educational medium: does television, as some have suggested, promote passivity and physical inhibition, and reduce social interactive skills? Could parent participation (by watching and discussing programs with the children) improve the learning situation? Are technological advances feasible and economical which would permit children's active responses to television education in the absence of parental tutors (i.e., through electronic terminals)? Will the availability of electronic video recordings increase the impact of television, and in what ways? These are but a few of the questions we must address to strengthen the benefits and reduce the risks of television as a significant developmental influence.

d. The Impact of Broad Social Programs. Many social experiments, while not designed specifically as child development programs, are related potentially to early childhood goals. Of particular interest are income maintenance, employment, and housing programs. With income maintenance, for example, a mother could have an alternative to going to work and taking her children to a day care center: she could, instead, stay at home and care for her own children there. The implications of programs such as these for child development are just beginning to be explored. Far more work is needed.

Income maintenance. At present there are three social experiments designed to examine certain economic and sociological factors associated with income maintenance programs (New Jersey, Seattle, Gary). Experimental families in each of the studies receive income maintenance payments; in Seattle, these payments are combined with employment and day care programs; in Gary, with social services and day care. Certain child performance measures are to be analyzed in each experiment, although since the experiments were not designed to focus on child development, they lack a systematic longitudinal approach. Additional child-oriented research is needed in this area.

Employment. With the exception of the Seattle Income Maintenance experiment, studies have not been designed to measure directly the impact of employment programs for parents on child development measures. Although a correlation has been found between fathers' employment status and their children's performance, the functional relationships basic to this correlation are not understood. For example, it is unclear whether the relationship is due primarily to increased income and the direct environmental benefits it can bring, or whether it also depends on subtle relationships between father's employment, family functioning, and children's imitative behavior. Similarly, it is frequently assumed that employment of mothers is positively related to child development for lower-class families, and negatively related to child development for middle-class families. Neither of these assumptions has been adequately tested; both should be. Related studies should also examine the effects of parental educational advances on child development. Promising leads, such as one from a study of adult education in Appalachia, have suggested that school attendance of children improves when their fathers attended adult education classes.

Housing. There is evidence that quality and location of housing are related to child development. At the very least, good improved housing will tend to have the effect of reducing illness and accidents. Indirect evidence suggests that a change in housing environment, i.e., neighborhood, affects children's development as much as housing quality. Direct studies evaluating the effects on children of programs which give low-income families the opportunity to obtain housing in middle-class neighborhoods are needed to determine the combined impact of quality and location of housing.

The paucity of studies examining the effects on children of basic changes in living conditions is apparent from this brief review. There is considerable evidence that children from low-income families generally achieve less well educationally and occupationally than do children from more advantaged families. However, it is not clear whether these achievement factors can be changed most effectively by programs directed toward the behavior of the poor (for example, compensatory programs, or parent tutoring programs) or by programs designed to alter the situation of poverty, or both.

e. The Combined and Comparative Effects of Programs. Research models appropriate to the study of broad social policy questions concerning the comparative value of alternative social programs, such as those described above, require the global or holistic approach described in the beginning of this section. It is believed that long-term child development effects will depend on the cumulative impact of combinations of health, education and social programs, including perhaps such programs as income maintenance, employment, or housing. We conclude this Chapter with a plea for the support of social research which simultaneously and experimentally investigates a number of intervention

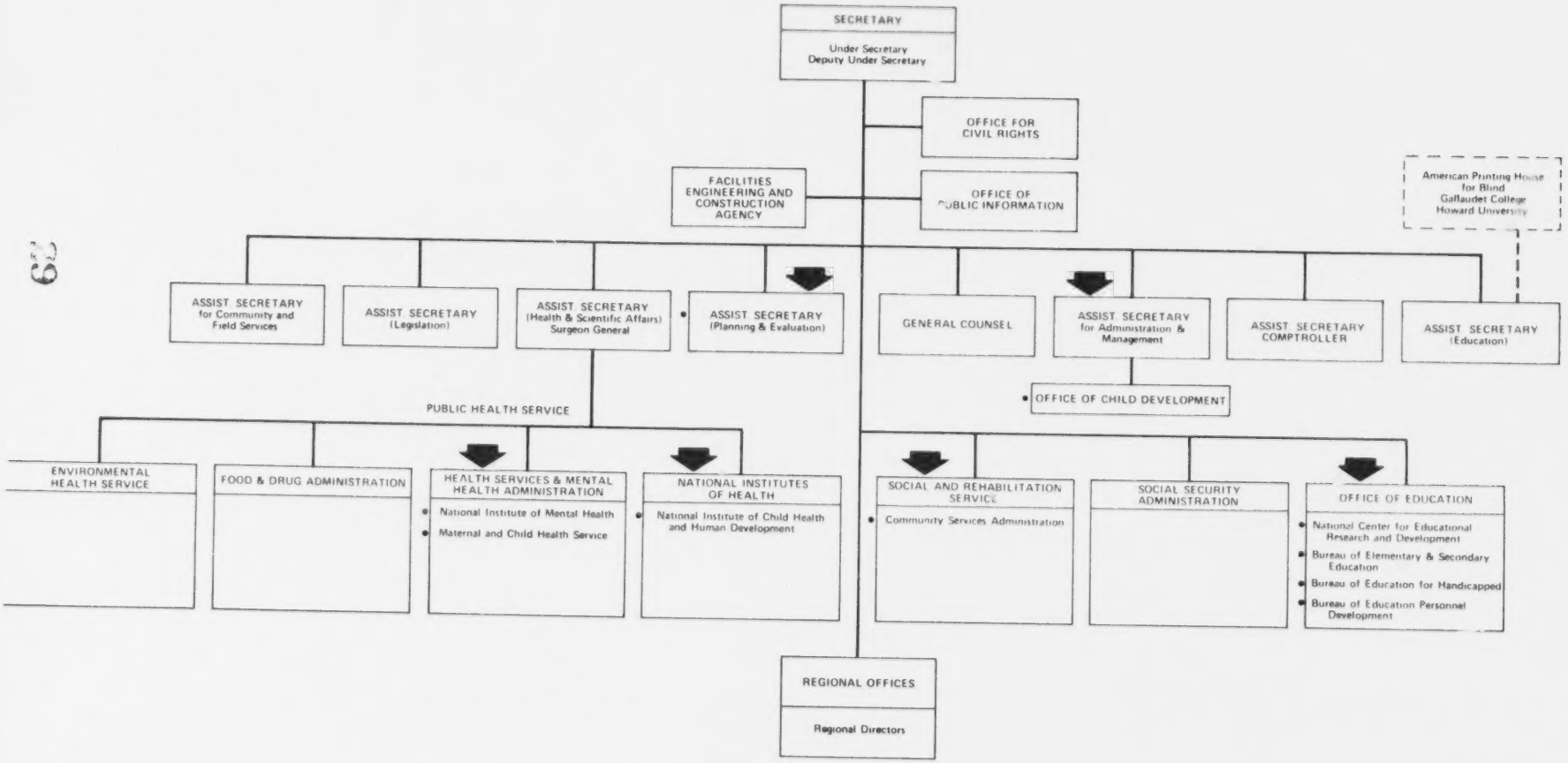
programs. Such large-scale social experiments are beyond the resources of child development researchers to propose and design alone. However, with sufficient financial support, it is possible to work cooperatively with other types of researchers to develop both the research and evaluation designs.

This type of research can provide the facts and information upon which to base subsequent broad-scale program planning and the most beneficial choices between alternative resource allocations. The problems for society and for children are too far-reaching and basic to limit research efforts to the design of a series of isolated and short-term interventions, without economic context.

Such broad-scale social programs and other smaller scale intervention programs and environmental influences require longitudinal research designs in order to determine their long-range eventual effects on the development of children. Thus the longitudinal "approach" to research applies to many of the content areas herein described. In the same way, the remaining general approaches set out at the beginning of this Chapter influence research and need to be considered in the planning of research in all content areas.

This Chapter has described the present status of knowledge about early childhood and has posed pertinent questions which need answering if increased knowledge about early child development is to emerge. The number of unanswered questions is large, but, increasingly, investigators are clarifying issues and identifying specific questions needing research attention so that the Nation may foster the best development of its children.

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, AGENCIES CONDUCTING EARLY CHILDHOOD RESEARCH *


SECRETARY
Under Secretary
Deputy Under Secretary
OFFICE FOR CIVIL RIGHTS
FACILITIES ENGINEERING AND CONSTRUCTION AGENCY
OFFICE OF PUBLIC INFORMATION
American Printing House for Blind
Gallaudet College
Howard University
ASSIST. SECRETARY for Community and Field Services
ASSIST. SECRETARY (Legislation)
ASSIST. SECRETARY (Health & Scientific Affairs) Surgeon General
ASSIST. SECRETARY (Planning & Evaluation)
GENERAL COUNSEL
ASSIST. SECRETARY for Administration & Management
ASSIST. SECRETARY COMPTROLLER
ASSIST. SECRETARY (Education)
OFFICE OF CHILD DEVELOPMENT
PUBLIC HEALTH SERVICE
ENVIRONMENTAL HEALTH SERVICE
FOOD & DRUG ADMINISTRATION
HEALTH SERVICES & MENTAL HEALTH ADMINISTRATION
National Institute of Mental Health
Maternal and Child Health Service
NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development
SOCIAL AND REHABILITATION SERVICE
Community Services Administration
SOCIAL SECURITY ADMINISTRATION
OFFICE OF EDUCATION
National Center for Educational Research and Development
Bureau of Elementary & Secondary Education
Bureau of Education for Handicapped
Bureau of Education Personnel Development
REGIONAL OFFICES
Regional Directors

Arrows indicate the large organizational entities in which are located the Bureaus or other levels conducting the early childhood research discussed in this report. The latter are indicated by dots.

II. Description and Analysis of Research: FY '71

In this Chapter, the general goals of each agency represented on the Panel* with respect to child development research are described and the early childhood research activities for FY '71 summarized. In addition, the overall distribution of research among agencies in FY '71 is analyzed. The description of the agency research programs highlights agency distributions of kinds and areas of research so that the strengths and special foci of the agencies can be compared. The analysis of cross-agency research gives a picture of the adequacy of FY '71 research in meeting the broad research needs specified in Chapter I.

The research topics examined in the preceding Chapter serve as a frame of reference for the present analysis. Thus, the areas and kinds of research discussed in this Chapter (see list following) are congruent with the major topics raised in Chapter I. The analyses are based on descriptions of all the research projects supported by each agency in the early childhood domain. (A given project may receive support ranging from approximately $20,000 to $2 million annually.) Since the categories for the analyses are not mutually exclusive, any given research project may have been tabulated under several different research areas and types. Thus, the percentage distributions reflect the total amount of research activity, not the total number of projects.

This Chapter deals primarily with the number of projects and total activity in various types and areas of research rather than with the

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* See Figure 1 for the location of the agencies within the Department of Health, Education and Welfare.

distribution of funding amounts. The latter is discussed briefly to give a more complete understanding of the adequacy of research in the areas specified as priority areas. The two types of data together will assist in the making of decisions about future research needs.

Areas and Kinds of Research

Following is a list of descriptions of areas of research used by the agencies in reporting data on FY '71 research projects, as well as kinds of research. These correspond with topics outlined in Chapter I as representing the broad areas of significant future research.

Areas of Research

A. The whole child (includes studies which conduct research in all three developmental areas: cognitive, social-emotional and physical)

B. Cognitive development (includes reading, language learning, and basic process skills, as well as other cognitive abilities)

C. Social-emotional development (includes attitudes, values, motives and social relationships)

D. Physical development (includes health and nutrition in both pre- and post-natal development)

E. Children of low-income families (includes socio-economically disadvantaged children)

F. Average-income or "mainstream" children (other than low-income children)

G. Handicapped children (includes physically, intellectually and socially handicapped)

H. Child care (includes Head Start and preschool as well as day care programs)

I. Social programs (includes research on new kinds of local or national

educational systems or programs, and on new social or economic institutions or programs, studied individually, such as health and welfare agencies or programs, day care, compensatory education, housing, employment, or income maintenance)

J. Primary environment (includes research focused on any one influence present in natural surroundings: adults, peers, school, home, neighborhood)

K. Combined influences (includes studies on the effect of settings providing educational and other programs, the impact of more than one of the primary influences -- school, home, teachers, parents, peers -- and of combinations of other social programs or environmental influences mentioned in I and J above)

L. Total life space (studies of the interrelatedness of all factors in a specific environment and their effect)

M. Parent and family involvement (includes training of parents as well as home and family influences)

N. Community involvement (includes study of school and community agencies and neighborhood groups involved in child development)

O. Child advocacy (study of the organized support of children's right to receive health, education and welfare services)

P. Individualized instruction (research on any element necessary to develop and validate instruction based on the characteristics and needs of the individual learner)

Q. Television instruction (including EVR -- electronic video recording)

R. Methodological research to develop measures and assessment instruments

S. Studies on the dissemination of research results (including training of personnel involved in children's learning and provision of services to children)

T. Research to assist planning*

1. The analysis or development of a classification system for the child development domain
2. Social policy studies related to child development
3. Research to determine social needs
4. Research on national goals for child development
5. Planning of goals for child development research

Kinds of Research

A. Basic analytic or descriptive research

B. Applied research*

1. Development of systems, materials, methods, media etc.
2. Demonstration of new products or innovative methods in the field
3. Pilot studies (occur in field but are not planned as demonstrations)
4. State-of-the-art studies
5. Surveys of target group needs and problems

C. Evaluations of overall program impact, or of individual strategies, models or projects, or cost-benefit studies

D. Longitudinally designed studies

E. Cross-sectional designs

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* Any project reported in a sub-category is tabulated as belonging to the main category.

DESCRIPTION AND ANALYSIS

OF FY '71 AGENCY RESEARCH

Office of Child Development,
Office of the Secretary, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: $7.9 m

● Mission and/or Functions re Early Childhood Research (ECR)

OCD has broad administrative and coordinating functions to develop priorities and strategies for ECR throughout HEW. Research emphasis in OCD is focused in several areas affecting the all-round development of children. Health, education and welfare are all of concern, with studies concentrating on how various programs and environmental influences in these areas affect child development. In FY '70 and '71 study was concentrated on child and day care services for children ages 0-5.

● FY '71 Distribution of Research by Area: New Projects, N = 46 ()[3]

15% or below	16% - 39%	40% or above
Social-emotional development	Cognitive development	Family involvement
Physical development	Whole child	Research planning
Combinations of influences	Primary environment	Low-income children
Total life space	Social programs	Child care
Dissemination	Community involvement	
Methodology	Child advocacy	
Average-income children		
Individualized instruction		
Television instruction		

● % Research by Kind of Research: New projects[1] and continuations[2], N = 65

Basic research	21%
Applied research	60%
Evaluations	9%
Longitudinal studies	(22%)[3]

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1. New projects = projects receiving funding for the first time in FY '71.

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

National Institute of Child Health and Human Development,
National Institutes of Health, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH (ECR)

● FY '71 Funding: $9.7 m

● Mission and/or Functions re Early Childhood Research (ECR)

The main objective is to support research in the basic processes of human development, including the biomedical processes, as well as social and behavioral development. With three main areas of investigation relating to early childhood: growth and development, mental retardation, and prenatal biology and infant mortality, studies range from investigations to develop new personality measurement approaches, to research on environmental impact on cognitive development, to study of the effect of diet on body composition.

● FY '71 Distribution of Research by Area: New projects[1] and continuations,[2] N = 192 ()[3]

15% or below	16% - 39%	40% or above
Social-emotional development		Cognitive development
Whole child		Physical development
Primary environment		All children
Social programs		
Child advocacy	15% or below con't.	
Child care		
Family involvement	Research planning	
Community involvement	Dissemination	
Combined influences	Methodology	
Life space	Low-income children	
	Individualized instruction	
	Television instruction	

● % Research by Kind of Research: New projects and continuations, N = 192

Basic research	98%	Evaluations	3%
Applied research	14%	Longitudinal studies	(25%)[3]

1. New projects = projects receiving funding for the first time in FY '71.
2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.
3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

National Institute of Mental Health,
Health Services and Mental Health Administration, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: $4.0 m

● Mission and/or Functions re Early Childhood Research (ECR)

The promotion of child mental health is the overriding concern. Areas of investigation are varied, spanning a continuum from the investigation of basic cognitive, personality and socialization processes, through the development of research methodologies, to study of intervention programs or other influences involving the home, the school or the community which affect the healthy emotional and cognitive growth (primarily) of all children.

● FY '71 Distribution of Research by Area: New projects[1] and continuations[2], N = 79 ()[3]

15% or below	16% - 39%	40% or above
Physical development	Whole child	Cognitive development
Life space	Primary environment	Social-emotional development
Community involvement	Social programs	Combined influences
Child advocacy	Low-income children	Family involvement
Research planning	Individualized instruction	Average-income children
Dissemination		
Methodology		
Child care		
Television instruction		

● % Research by Kind of Research: New projects and continuations, N = 79

Basic research	77%
Applied research	23%
Evaluations	(17%)[3]
Longitudinal studies	(37%)

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1. New projects = projects receiving funding for the first time in FY '71.

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

Maternal and Child Health Service,
Health Services and Mental Health Administration, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: $2.5 m

● Mission and/or Functions re Early Childhood Research (ECR)

To improve the health of mothers and children through increasing the effectiveness of health and crippled children's services. Major areas of investigation include the improvement of school health programs, maternity health services, nutrition, prevalence of handicapping conditions. Support is not available for basic research -- focus is on applied research and evaluation of delivery systems.

● FY '71 Distribution of Research by Area: New projects,[1] N = 33 ()[3]

15% or below	16% -39%	40% or above
Cognitive development	Research planning	Physical development
Social-emotional development	Handicapped children	Low-income children
Whole child	Average-income children	
Primary environment		
Social programs		
Combined influences		
Life space		
Family involvement		
Community involvement		
Child advocacy		
Child care		
Dissemination		
Methodology		
Individualized instruction		
Television instruction		

● % Research by Kind of Research: New projects, N = 33

Basic research	0	Evaluation	(21%)[3]
Applied research	100%	Longitudinal studies	(6%)

1. New projects = projects receiving funding for the first time in FY '71

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

Community Services Administration,
Social and Rehabilitation Service, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: $1.7 m

● Mission and/or Functions re Early Childhood Research (ECR)

To improve the status and welfare of children through research which will contribute to the advancement of child welfare. Research is conducted in such areas as protection services for neglected and abused children, adoption, foster care, services for mentally retarded children and day care services.

● FY '71 Distribution of Research by Area: New projects, N = 13 ()[3]

15% or below	16% - 39%	40% or above
Cognitive development	Primary environment	Social-emotional development
Physical development	Combined influences	Social programs
Community involvement	Life space	Family involvement
Individualized instruction	Child care	Child advocacy
Television instruction	Low-income children	Research planning
	Average-income children	Dissemination
		Methodology
		Handicapped children
		Whole child

● % Research by Kinds of Research: New projects[1] and continuations,[2] N = 16

Basic research	37%
Applied research	63%
Evaluations	(50%)[3]
Longitudinal studies	(25%)

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1. New projects = projects receiving funding for the first time in FY '71

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

National Center for Educational Research and Development,
U. S. Office of Education, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: $22.6 m

● Mission and/or Functions re Early Childhood Research (ECR)

Expected to be in a transition phase with the passage of pending legislation to establish a National Institute of Education. Presently the major NCERD programs for young children are concentrated in the regional laboratories and the R & D centers. The National Program on Early Childhood Education (NPECE) consists of a coordination center and a half-dozen research centers located at major universities. The primary objective of NPECE is to develop comprehensive child care and education models for children through age eight. The work of the other R & D centers focuses on the development of instructional systems for young and older children. The regional educational laboratories concentrate on the development and demonstration of alternatives to present school practices. Their work helps close the gap between theory and practice by developing means for solving practical educational problems. They also conduct research for children beyond eight years, which is not reported here. In addition to the work of the Labs and the Centers, NCERD has sponsored a program of basic studies relating to the fundamentals of the teaching and learning process, and a regional research program of small grants to educational institutions, both of which have supported research relating to young children.

● FY '71 Distribution of Research by Area: New projects[1] and continuations,[2] N = 64 (not counting Regional Research projects) ()[3]
(See following page for footnotes)

15% or below	16% - 39%	40% or above
Physical development	Social-emotional development	Cognitive development
Whole child	Primary environment	Child care
Social programs	Combined influences	Low-income children
Life space	Family involvement	Average-income children
Community involvement	Dissemination	
Child advocacy	Methodology	
Research planning	Individualized instruction	
Television instruction		

● % Research by Kind of Research: New projects and continuations, N = 78 (includes Regional Research projects)

Basic research	42%	Evaluations	(12%)*
Applied research	47%	Longitudinal studies	(5%)[3]

National Center for Educational Research and Development (NCERD),
U. S. Office of Education, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH (Continued)

* Because evaluation is an integral part of the development of instructional systems, the actual amount of evaluation work is much greater than 12%. This figure is partly a result of Lab and Center research having been reported at the program rather than the project level. Thus, several <u>projects</u> make up a research program.

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1. New projects = projects receiving funding for the first time in FY '71.

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

Bureau of Education for the Handicapped
U. S. Office of Education, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: $16.8 m

● Mission and/or Functions re Early Childhood Research (ECR)

BEH research is primarily of a development and demonstration nature. A number of such programs provide in effect a range of educational and other services to handicapped children and their parents or to organizations serving handicapped children. The Early Education Program supports the development of early education models to demonstrate a variety of effective approaches to teaching young handicapped children. The Deaf/Blind Program develops innovative programs to provide comprehensive diagnostic and evaluative services for deaf-blind children and consultative services to parents, teachers and others. Other programs -- the learning disabilities program to assist children with language problems, the child advocacy program, the media services, and teacher training programs and the work of the Research Division are all concerned with the delivery of better health, education and welfare services to handicapped children.

● FY '71 Distribution of Research by Area: New projects[1] and continuations,[2] N = 147 (See following page for footnotes.) ()[3]

15% or below	16% - 39%	40% or above
Social-emotional development	Cognitive development	Whole child
Physical development	Social programs	Combined influences
Primary environment		Family involvement
Life space		Community involvement
Child advocacy		Handicapped children
Child care		
Research planning		
Dissemination		
Methodology		
Average-income children		
Low-income children		
Individualized instruction (major emphasis)		
Television instruction		

Bureau of Education for the Handicapped,
U. S. Office of Education, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH (Continued)

● % Research Projects by Kind of Research: New projects and continuations, N = 147

Basic research	0
Applied research	87%
Evaluations	0
Longitudinal studies	(1%)[3]
Training	9%

1. New projects = projects receiving funding for the first time in FY '71.

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

Bureau of Elementary and Secondary Education,
U. S. Office of Education, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: Follow Through Program, $11.4 m*

● Mission and/or Functions re Early Childhood Research (ECR)

The purpose of the Follow Through Program is to sustain and supplement in the primary grades the gains made by low-income children who have had a full year's experience in Head Start or a comparable preschool program. It is designed to provide comprehensive services, i.e., instruction, nutrition, health, social work and psychological services, staff development and parent participation. The majority of the research associated with Follow Through is in program development with subsequent evaluation.

● FY '71 Distribution of Program Areas Studied: New projects, N = 24 ()[3]

15% or below	16% - 39%	40% or above
Physical development	Social-emotional development	Cognitive development
Whole child	Combined influences	Primary environment
Life space	Research planning	Family involvement
Child advocacy	Dissemination	Community involvement
Child care	Individualized instruction	Social programs
Methodology		Low-income children
Average-income children		
Television instruction		

● % Research Projects by Kind of Research: New projects[1] and continuations,[2] N = 26
(See following page for footnotes)

Basic research	4%
Applied research	85%
Evaluations	(30%)[3]
Longitudinal studies	4%

* The research or research-related activities of BESE's Title I (compensatory education) and Title III programs (innovative and supplementary education) are not included in this report.

Bureau of Elementary and Secondary Education,
U. S. Office of Education, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH (Continued)

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1. New projects = projects receiving funding for the first time in FY '71.

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

Bureau of Educational Personnel Development,
U. S. Office of Education, DHEW

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: Early Childhood Teacher Training, $5.6 m

● Mission and/or Functions re Early Childhood Research (ECR)

To improve the supply of qualified teacher trainers, supervisors, curriculum and evaluation specialists, teachers and aides for all early education by supporting projects to train or retrain school personnel. A special aim is to increase the number of educational personnel trained to teach low-income children. This program is included in this report because of the importance of training for the dissemination of research results. Inasmuch as it is not a research program as such, it was not analyzed in detail.

● FY '71 Distribution of Research by Area: New projects[1] and continuations,[2] N = 46

15% or below	40% or above
Research planning	Dissemination, i.e., training

● % Research Projects by Kind of Research: New projects and continuations, N = 46

Basic research	0
Applied research	7%
Evaluations	0
Longitudinal studies	0
Training	93%

1. New projects = projects receiving funding for the first time in FY '71.

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

Office of the Assistant Secretary for Planning and Evaluation,* Department of Health, Education and Welfare

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: $933,000

● Mission and/or Functions re Early Childhood Research (ECR)

Serves a planning, coordinating and evaluative function: for programs of Secretarial and Administration concern (such as the Family Assistance Program and the Comprehensive Child Development Act), for areas of high priority not specifically under the jurisdiction of particular agencies, and for problems which cross-cut the concerns of different agencies.

● FY '71 Distribution of Research by Area: New projects[1] and continuations,[2] N = 11 (See following page for footnotes.) ()[3]

15% or below	16% - 39%	40% or above
Cognitive development	Low-income children	Social programs
Social-emotional development		Child care
Physical development		Research planning
Whole child		Average-income children
Primary environment		
Combined influences		
Life space		
Family involvement		
Community involvement		
Child advocacy		
Dissemination		
Methodology		
Individualized instruction		
Television instruction		

● % Research Projects by Kind of Research: New projects and continuations, N = 11

Basic research	0
Applied research	0
Evaluations	100%
Longitudinal studies	0

Office of the Assistant Secretary for Planning and Evaluation,
Department of Health, Education and Welfare

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH (Continued)

* Three offices of program planning and evaluation in HEW support some research related to child education and development. In FY '71, the child research of OPPE of the Office of Education and OPPE of the Health Services and Mental Health Administration was of a minor nature. That of the Office of the Assistant Secretary for Planning and Evaluation has been more substantial. Only the work of the latter is reported in detail.

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1. New projects = projects receiving funding for the first time in FY '71.

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

Office of Economic Opportunity,
Executive Office of the President

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH

● FY '71 Funding: $5.0 m

● Mission and/or Functions re Early Childhood Research (ECR)

The R & D program is directly related to the solution of problems of poor families and their children and has had a major focus on the development, utilization, and evaluation of day care and child care programs. Other programs having broad social effects, such as various kinds of housing plans, are also studied, along with means of effectively disseminating information.

● Distribution of Research by Area:* FY '70, N = 27 ()[3]

15% or below	16% - 39%	40% or above
Physical development	Combined influences	Cognitive and social-emotional development together
Whole child		Social programs
Planning		Family involvement
Methodology		Child care
Average-income children		Low-income children
Individualized instruction		
Television instruction		

● % Research by Kind of Research: FY '71, New projects[1] and continuations,[2] N = 14 (See following page for footnotes)

Basic research	21%
Applied research	43%
Evaluations	21%
Longitudinal studies	(21%)[3]

* Only the six projects started in FY '71 were analyzed in detail, therefore information for FY '70 is presented as being more representative, although not all areas were reported for the FY '70 analysis.

Office of Economic Opportunity,
Executive Office of the President

FY '71 ACTIVITY IN EARLY CHILDHOOD RESEARCH (Continued)

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1. New projects = projects receiving funding for the first time in FY '71.

2. Continuations = projects funded before FY '71 which continued to receive funding in FY '71.

3. Parentheses () indicate duplicated counts, i.e., the amount has been counted in more than one research category or area.

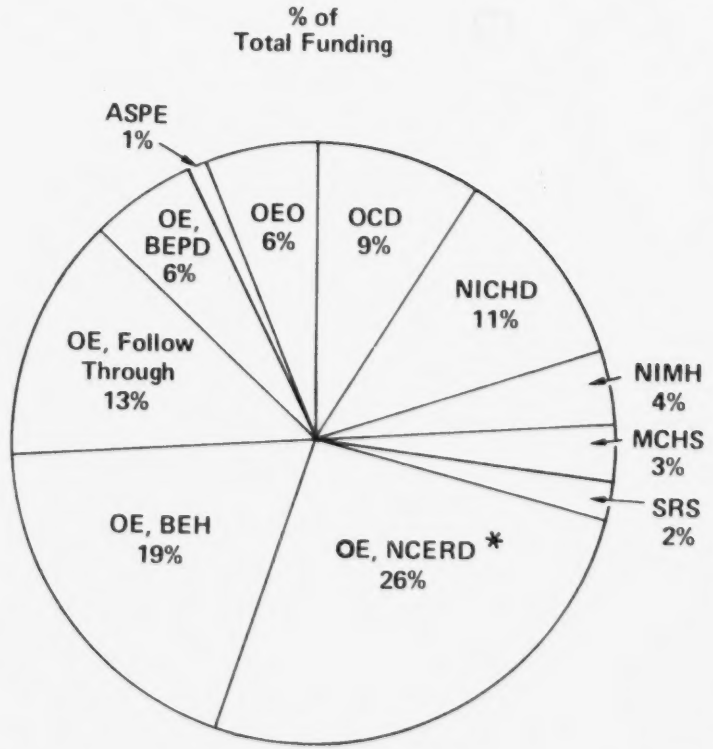
Summary Analysis of the FY '71 Research Program

The 11 Federal agencies involved in early childhood research supported over 700 programs or projects in FY '71 with a total budget of over $88 million. These facts are displayed in Table 1 where it is seen that the bulk of the spending (64%) was done by the Office of Education through the Bureau of Education for the Handicapped (BEH), the Bureau of Educational Personnel Development (BEPD), the National Center for Educational Research and Development (NCERD), and the Follow Through Program in the Bureau of Elementary and Secondary Education (BESE). NCERD had the largest budget of any individual agency with $22.6 million. The Bureau of Education for the Handicapped with $16.8 million, and the Follow Through Program with $11.4 million had the next highest expenditures. The only other agency with a budget of more than 10% of the total was the National Institute of Child Health and Human Development (NICHD), which supported $9.7 million of early childhood research in FY '71. The agency research programs are discussed in greater detail below.

Office of Education (OE)

The Office of Education, because four of its major Bureaus are involved in child development research, supports a varied range of research activities. This is suggested by Table 2 which demonstrates the relative areas of strength of each agency. If we consider only those research areas of the four OE bureaus (NCERD, BEH, Follow Through and BEPD) in which the greatest amounts of work were done, the extent and variety of the research is apparent. NCERD focused much of its work in the cognitive development area and was concerned with research relating to child development (child care) programs. (The latter is a primary area of investigation of the National Program on Early Childhood Education.) Research related to children of both high-and low-income

TABLE 1 FY '71 EARLY CHILDHOOD RESEARCH FUNDING BY AGENCY



*Over half of this number represented program level research, i.e., a single program includes serveral research projects.

TABLE 2

FY 71 DISTRIBUTION OF AREAS AND KINDS OF RESEARCH BY AGENCY [1]

(Based on Total Number of Projects Each Agency)

AREAS OF RESEARCH	OCD	NICHD	NIMH	MCHS	SRS (N=16) (2)	NCERD (3)	BEH	BESE (Follow Through)	BEPD	OASPE	OEO (FY 70)	NO. AGENCIES 40% or more
Development Processes												
Cognitive Development	a	X	X	b	b	X	a	X	b	b	X	5
Socio-emotional Dev.	b	b	X	b	X	a	b	a	b	b	X	3
Physical Development	b	X	b	X	b	b	b	b	b	b	b	2
Whole Child	a	b	a	b	X	b	X	b	b	b	b	2
Environmental Effects												
Primary Environment	a	b	a	b	a	a	b	X	b	b	–	1
Social Programs	a	b	a	b	X	b	a	X	b	X	X	4
Child Advocacy	a	b	b	b	X	b	b	b	b	b	–	1
Child Care & Preschool Ed.	X	b	b	b	a	X	b	b	b	X	X	4
Family Involvement	X	b	X	b	X	a	X	X	b	b	X	6
Community Involvement	a	b	b	b	b	b	X	X	b	b	–	2
Combined Influences	b	b	X	b	a	a	X	a	b	b	a	2
Life Space	b	b	b	b	a	b	b	b	b	b	–	0

1. The vertical columns show the percent of projects for each area and kind of research, carried out in each agency. They show agency focus. The horizontal rows show the research all the agencies carried out in any one kind or area of research. They indicate the areas in which the greatest amount of work was carried out in FY 71.

KEY:

X = 40% or more of projects

a = 16-39% of projects

b = 15% or less of projects

TABLE 2, con't

	OCD	NICHD	NIMH	MCHS	SRS	NCERD	BEH	BESE (Follow Through)	BEPD	OASPE	OEO	NO. AGENCIES 40% or more
Research Planning	X	b	b	a	X	b	b	a	a	X	b	3
Research Dissemination	b	b	b	b	X	a	b	a	X	b	–	2
Research Methodology	b	b	b	b	X	a	b	b	b	b	b	1
Research Population												
Low-income children	X	b	a	X	a	X	b	X	b	a	X	5
Average-income or all children	b	X	X	a	a	X	b	b	b	X	b	4
Handicapped	b	b	b	a	X	b	X	b	b	b	–	2
Individualized Instruction	b	b	a	b	b	a	b	a	b	b	b	0
Television Instruction	b	b	b	b	b	b	b	b	b	b	b	0
KINDS OF RESEARCH												
Basic Research	a	X	X	b	a	X	b	b	b	b	a	3
Applied Research	X	b	a	X	X	X	X	X	a	b	X	7
Evaluations	b	b	a	a	X	b	b	a	b	X	a	2
Longitudinal Studies	a	a	a	b	a	b	b	b	b	b	a	0

2. Since the total number of projects reported for SRS was 16, only six projects represent 40% of the total and do not involve a major investment in FY 71.

3. Over half the number reported for NCERD represent program level research. Since a program may consist of several projects the amount of research in any one category in Table 2 may be underrepresented for NCERD.

families was of major concern, and both basic and applied research received high amounts of support.

The Bureau of Education for the Handicapped, on the other hand, concentrated on the development of programs to serve handicapped children, with all funding going into applied research. The emphasis of this Bureau's programs on all the needs of the handicapped child -- cognitive, physical and emotional -- is seen in the high amount of research concerned with the whole child. The service orientation of BEH and its efforts to coordinate and involve a variety of local programs and agencies in serving handicapped children, as well as families, are illustrated in other areas marked with an X in Table 2. The Follow Through Program in BESE is largely of a developmental nature (applied research), and had in FY '71 a relatively high amount of its funding in program evaluation (68%). Follow Through serves the disadvantaged primarily (low-income) and attempts to involve families and communities in providing comprehensive services in its child development programs. Its interest is the all-round development of children, with special attention given to cognitive development (as shown in Table 2). Follow Through had substantial amounts of effort in both research planning and dissemination. BEPD is represented by the early childhood teacher training program which, through its training projects, serves to disseminate research results which can be adapted for children's learning. With NCERD also supporting research on dissemination and BEH involved in training activities, the Office of Education had, comparatively, the largest amounts of research in this area in FY '71. No other agency, except one (Social and Rehabilitation Service, SRS), reported any activity in research dissemination.

National Institute of Child Health and Human Development (NICHD)

While most of OE's work was of an applied research nature (development and demonstration), NICHD, on the other hand, is almost entirely concerned with basic research. Further, with its relatively substantial budget, it invested more money than any other agency in research related to the underlying processes of physical growth and development. It conducted basic research in the other developmental process areas as well, but gave the most support to projects studying the basic biological, biomedical and physiological aspects of growth -- basic research which can benefit all children. MCHS had over 40% of its work bearing on physical development also, but this was entirely of an applied research nature. (The vast area between health delivery studies conducted by MCHS and the physiology of disease and prenatal and perinatal growth explored by NICHD is largely unstudied.)

Office of Child Development (OCD)

The agency with the third largest early childhood research budget, OCD, had a widely varied research program in FY '71.* It supported large amounts of applied research and substantial amounts of basic research. It is one of three agencies (OASPE, Office of the Assistant Secretary for Planning and Evaluation and SRS are the others) which had over 40% of its projects involved in research which can assist planning. Other areas of OCD research activity (including that concerning the family), which were represented in over 40% of the work, reflect its concentration in FY '71 on preschool programs (child care) for disadvantaged (low-income) children.

Other Agencies

The research strengths of the remaining agencies can be determined in the same way by examining Table 2. Scanning the appropriate vertical column provides an overall view of any given agency's work, while scanning the

*After OE and NICHD

horizontal rows allows comparison of agencies along any one research dimension. By means of the latter, we see further, for example, that NIMH (National Institute of Mental Health), SRS and OEO (Office of Economic Opportunity) were the agencies most heavily supporting research on social-emotional development; that SRS, Follow Through, OASPE and OEO reported 40% or more of their work as bearing on social programs of one kind or another; and that no agency had 40% or more of its work studying the total life space of children.

To conclude this discussion of the overall activities of the agencies, their special emphases, in terms of kinds of research, are summarized below in Table 3. Table 3 shows that most of the agencies had most of their work in applied research. It also shows that five of the agencies had substantial activity in both basic and applied research (NCERD had over 40% in both basic and applied research) and one of these (SRS) had much of its work in evaluations as well as in applied and basic research. The work of BEPD in training teachers is also indicated.

Using Tables 2 and 3 together, it is possible, at least tentatively, to locate the agencies which historically have conducted the largest amounts of basic or applied research in areas of particular concern to this report. Because this method reveals also which areas received the least attention, it will help in determining areas which may need additional study.

Gaps in the Research

A brief examination here of how the FY '71 research measures up to the yardstick of research needs presented in Chapter I will be a start in developing the background of a research plan for the future. (Further data will be provided in Chapter III.) Table 4 shows the distribution of research of all agencies with the grand total of research projects of all agencies

Table 3

Agencies Specializing in Different Kinds of Research in Early Childhood

FY 1971[a]

Basic Research (40+%)	Applied Research (40+%)	Evaluations (40+%)
NICHD	OCD*	SRS
NIMH*	MCHS	OASPE
NCERD	SRS*	
	NCERD	Training
	BEH	BEPD
	BESE	
	OEO*	

[a]Agency initials under a column head indicate that the agency had 40% or more of its work in the kind of research indicated. An asterisk in column 1 (the basic research column) indicates that the agency also conducted between 16 and 39% of its work in applied research. In column 2 (the applied research column) an asterisk indicates that the agency also had 16-39% of its work in basic research.

Table 4

All-Agency Distribution and Rank Order (by per cent) of Areas of Research

FY 1971* N = 707 projects

26 to 30%	Per Cent Rank	21 to 25%	Per Cent Rank
Family involvement	30%	Combined influences	25%
Cognitive development	29%	Low-income children	24%
Handicapped children	29%	Physical development	23%
Child care	28%		

16 to 20%		11 to 15%	
Whole child	20%	Average-income children	15%
Community involvement	19%	Social programs	13%
Social-emotional development	16%	Research dissemination	13%

6 to 10%		1 to 5%	
Research planning	10%	Child advocacy	5%
Primary environment	9%	Life space	2%
Individualized instruction	7%	Television instruction	1%
Research methodology	6%		

* Percentages are based on the total number of projects and on non-mutually exclusive categories.

used as the base. In the composite, no research area was studied in more than 30% of the projects. For convenience, the distribution is shown divided into thirds. In addition, research areas are shown in rank order of percent of total research activity.

The rank ordering shows research concerning parents and the family to have been studied in the largest number of projects (30% of the total), whereas the child's life space (2%) and television instruction (1%) were studied the least. The research areas in the last third, i.e., the four in the 6% to 10% range (research planning, primary environment, individualized instruction, and research methodology) and the three in the 1% to 5% range (child advocacy, television instruction, and life space) are those which need to be examined most closely to determine how much additional support they require. Since they are among those areas specified in Chapter I as needing investigation, and they fall in the last third of the distribution as shown in Table 4, they merit special attention.

Some of the areas shown in the top half of the distribution, where their location might suggest they are least in need of expanded support, require further discussion. For example, three of these fell into the upper half because of the large amounts of work of individual agencies. BEH, which conducts applied research, primarily, was responsible for most of the work on the whole child (and on handicapped children). NIMH, with its interest in mental health, supported the greatest amount of work in social-emotional development (both basic and applied research). NICHD, which specializes in basic research relating to growth and development, supported most of the work in physical development. NCERD, focusing on school change, had the largest amounts of work in cognitive development.

This means that most of the research in the heavily supported areas has

the characteristic flavor (and mission limitations) of the agency which is responsible for most of the work. It is invalid to assume therefore that because an area appears in Table 4 as having the largest amounts of support it is necessarily adequately covered. Table 4 must be used in conjunction with Table 2 in order to arrive at a more accurate estimate of the kind of coverage an area received, all along the continuum of distribution.

Looking at some of the other areas, it is likely that the high amounts of research in family involvement, cognitive development, child care and for low-income children are related to and stem from the concentration of several agencies on the preschool learning and development of children in day care and child care programs. Further, it is interesting to note that all the work in the developmental processes falls in the upper half of the distribution, i.e., basic and applied research on cognitive, physical and social-emotional development and whole child research were the focus in the largest number of projects. Conversely, most of the research on the effects of environmental influences and programs falls in the lower half -- research on social programs, on family, peer, school and community influences (the primary environment) and on the effect of interrelated aspects of the environment (life space studies) received the least attention as a group. The exception is studies on <u>combinations</u> of influences, which is in the upper third. Since there are hardly any studies of individual <u>social</u> programs, with the exception of compensatory education and day care, studies on more than one of the primary influences accounts for most of the work in the combined influences category. And this work is itself directly related to early education and day care research. This means that in some studies of day care programs, for example, the combined effects of parent participation, teacher skills and special materials may have been studied, or that in the

development of early education programs for handicapped children, local kindergarten, social services and medical services were involved.

Table 5 indicates there was about an equal division in the amounts of basic and applied research activity. Table 6 shows that almost three times as much budget support went to applied research as basic research. This difference does not necessarily mean, however, that basic research was inadequately funded in FY '71. It may indicate, for example, that applied research on a one-to-one basis is more "expensive" than basic research to conduct. Since most of the basic research was carried out by agencies concerned with physical and mental health and development, a determination needs to be made as to whether more money is necessary to support basic research in areas other than the developmental processes. Some of the areas which may need additional study in both basic and applied research programs are social programs and other environmental influences, special instructional methods such as individualized and television instruction, research methodology, and other areas in the last three groups of Table 4 discussed above. More longitudinal studies are needed also (Table 2).

Keeping in mind the fact that the amount of work (numbers of programs or projects) sponsored by an agency is not necessarily proportional to the amount of money support given to individual areas of research, Table 7 is included to provide a rough estimate of the amount of total funding given to each research area. The figures were obtained by multiplying the percentages for the total amount of work sponsored in each research area, found in Table 4, by the total early childhood research budget of approximately $88 million. Sampling has shown that the total amount of research and the total amount of funding for each area usually vary within 2 to 3 percentage points of each other. In television research, for example, while only 1%

TABLE 5 PERCENT OF TOTAL NUMBER OF RESEARCH PROJECTS BY KINDS OF RESEARCH, FY '71

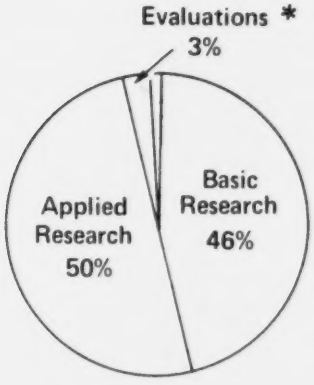
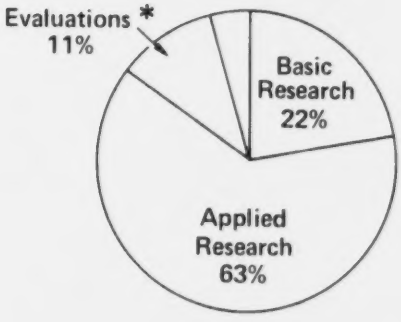


TABLE 6 PERCENT OF TOTAL FUNDING * * BY KINDS OF RESEARCH, FY '71



* For projects reported primarily as evaluations, i.e., not included in amounts for other kinds of research.

* * Balance of total expenditures (approximately 4% of $88 million) went to research on methodology and dissemination and other research not recorded in this Table.

Table 7

Approximate Amounts of Funding by Area of Early Childhood Research All Agencies, FY 1971* (Millions of Dollars)

Total Budget: $88.1 m

Developmental Processes	
Cognitive Development	$25.5
Social-emotional Development	14.0
Physical Development	20.2
Whole Child	17.6
Environmental Effects	
Primary Environment	7.9
Social Programs	11.4
Combined Influences	22.0
Life Space	1.8
Family Involvement	26.4
Community Involvement	16.7
Child Advocacy	4.4
Child Care and Preschool Education	24.6
Research Planning	8.8
Research Dissemination	11.4
Research Methodology	5.3
Research Population	
Low-income children	22.0
Average-income children	13.2
Handicapped children	25.5
Individualized Instruction	6.2
Television Instruction	2.5**

* These figures are estimates obtained by multiplying the percentages for total amounts of work in each area by the total early childhood research budget. Further, since the areas in which data were recorded were not mutually exclusive, there is overlap in the funding amounts shown for each area. For this reason the total of the amounts shown in Table 7 is not the actual budget total for FY '71.

** Actual amount funded.

of all the projects were reported as studying TV as a medium of instruction, the actual funding was about 3% of the total all-agency research budget. This meant, in this case, that about $2.5 million instead of $830,000 was spent. This discrepancy is due to the fact that one project, the "Sesame Street" television project, accounted for $2 million of the total TV research expenditure. Insofar as the variance between amount of total research and amount of total funding is not great, Table 7 shows, in general, the same areas needing more study as does Table 4.

III. Agency Research and Development Plans: FY '73

The preceding Chapter provided information about the particular nature of the work of each agency and a description of the overall research picture in child development for FY '71. This Chapter will describe the anticipated early childhood research plans of the agencies for FY '73 and will examine their adequacy in terms of the identified areas of research need described in Chapter I. Areas of research which are relatively weak or strong will be identified, to provide a guide for future recommendations for research.

In addition to comparing agency plans at the general level with the statement of broad needs and priorities in Chapter I, detailed information will be given on some specific research questions within major areas (also presented in Chapter I), which are to be investigated in FY '73. Examples will be provided of planned research on questions the agencies consider to be those most significant for early childhood research in the next few years. (See the Appendix.)

Office of Child Development

In FY '73, the Office of Child Development plans to continue its major research effort related to the provision of day care and child care services to young children. However, the Office will broaden its research effort through greater emphasis on family and youth; the effect of changing social institutions on children, youth, and families will be a special focus of future OCD work. Concern will shift from the individual child alone to the individual interacting with significant others and institutions, and to institutions interacting with one another in community processes.

The new focus on advocacy of children's rights will become an integral part of the concentration on individuals, families, and community activities. With this new approach, and its expanded programs in research planning and dissemination of research results, the future research of OCD will help fulfill many of the research needs mentioned in previous sections. The addition in FY '72 of research on television impact and the study of children from a variety of socio-economic backgrounds will round out the program to an even greater extent. Table 8 translates this information into the format we have used previously to show areas of research concentration for each agency.

National Institute of Child Health and Human Development

Plans for NICHD early childhood research in FY '73 center on basic research in three main areas of investigation -- growth and development, mental retardation, and perinatal biology (period of pregnancy plus the first year of life), including infant mortality.

Among the major areas of effort in the growth and development program are learning and cognitive development, nutrition, social and emotional growth, and physiological development. In the field of learning and cognitive development there will be an effort to study in FY '73 and beyond the ways in which cognitive development is affected by environmental stimuli. In the field of nutrition there will be multidisciplinary emphasis upon learning how psychological, social, and cultural factors interact to affect the nutritional status and functional ability of the individual. Activities in the social growth, personality, and emotional development area will deal with the development of new personality measurement approaches and related psychometric concerns. Considerable emphasis will be given to longitudinal studies.

The mental retardation program in FY '73 will continue to enlarge its

efforts in the support of experimentation with varied child-rearing and stimulation methods.

The perinatal biology and infant mortality program is multifaceted. Among the priority areas of work are drug addiction in pregnancy, maternal-fetal nutrition and intrauterine growth, environmental factors in development, and training programs in developmental and perinatal biology.

The plans for '73 as described above indicate that NICHD intends to conduct work in several of the areas of major research concern. Plans are summarized in Table 8.

National Institute of Mental Health

The need for synthesis of findings and coordination of research has been taken into consideration in the FY '73 plans of NIMH in the Division of Extramural Research and the Center for Studies of Child and Family Mental Health. An intensive analysis was made of the research program and the following major goals have been specified for future research:

1. To analyze and synthesize findings of completed basic and applied research in order a) to identify criteria of effective child care and education programs and b) to identify areas of future basic research related to social adjustment and competence.

2. To analyze and synthesize findings of basic and applied research on the family in order to develop recommendations for research on the total network of family relations that affect children's development.

3. To develop a program of basic research on the community and on the professions (medical, social work, etc.) and institutions (educational, other) that affect children and families.

4. To develop a program of intervention (social) research on innovative

methods of developing community, professional, and institutional support for family care and education.

Thus, NIMH, by studying research results and through program planning, will add research in several identified priority areas to its present research activity. Research to aid the planning process is one of these areas, a continued emphasis on healthy social-emotional development is another, and an expanded global approach to the study of the total family and of community and social influences is a third. The study of community influences on children, and especially the study of community services to families and children, is related to the area of child advocacy, another priority area of investigation.

Maternal and Child Health Service

The plans of MCHS for future research about mothers and children are based upon consideration of what problems are likely to be of special significance in the health field within the next five years. The priorities established for FY '73 and later research include the following:

1. Health delivery systems for children.
2. The special needs of the pregnant adolescent girl.
3. The nutritional status of children in this country.
4. The health issues in group care facilities for very young children.
5. The utilization of paraprofessional health personnel.
6. The development of family planning as a component part of comprehensive maternal health services.
7. Development of methodology and strategy for evaluation of health programs.

These plans suggest that research in the future will expand into some of the identified priority areas of need. For example, the emphasis on study of delivery systems and the use of paraprofessionals will provide information, indirectly, on the effective dissemination of research results. Also, the investigation of health in group care facilities and the development of family planning shows a concern with broad-scale social programs, while the study of effective delivery systems is likely also to involve substantial family and community participation. Finally, the study of methodology will make a contribution in an area needing much more study.

Community Services Administration, SRS

The health and welfare grants program administered by the Community Services Administration of SRS will continue in FY '73 in the following areas of ongoing concern: the effects of adoption, adoptive procedures, types of children and families needing foster care, and factors in successful foster placement. A second area of continued emphasis will be ways of providing high quality day care for infants and young children, demonstrating different types of child care arrangements including group care of infants, and devising means of building in socializing and developmental experiences. The third major area of long-standing interest is in the establishment of multi-service programs for unwed teenage pregnant girls, providing for health, social work, and education services during and after pregnancy. Stress will be given in FY '73 to development of new service delivery systems and community involvement in service projects. Thus, the dissemination of findings, the holistic approach and child advocacy will all receive attention in SRS's future research projects. Research on family involvement and methodology will also be expanded.

National Center for Educational Research and Development

The specifics of NCERD's research activities in FY '73 are uncertain at this point because of the pending legislation in Congress to establish a National Institute of Education. Such an Institute would incorporate the R & D activities of NCERD and possibly some of the other Office of Education research and training functions as well. Since the legislation has not been passed, planning for the future is tentative at best, particularly since the first year of operation of NIE, if established, would be devoted to the planning of an Office of Education research program. While the plans for the total Institute effort are not yet available, in general the approach will be that of problem solution, with programs of research organized around the solving of pressing socio-educational problems. For example, three such problem areas might be school financing, the quality of education, and the education of the disadvantaged.

Many of the current NCERD programs related to early childhood are expected to be continued at about the same general level, with expansion anticipated within the areas marked in Table 8. The implementation of these plans will continue to provide a broad variety of applied research in the domain of early childhood, with the emphasis on the development of validated instructional systems and materials for young children - and in the case of the National Program on Early Childhood Education, the development of validated education and child care models. The efforts of NCERD in basic research and television instruction research will continue at slightly expanded levels.

Bureau of Education for the Handicapped

BEH has been in the process of revising its Bureau-wide objectives, now that the Office of Education has adopted "education of handicapped

children" as one of its major objectives. An overall BEH objective for the next five years is to secure the enrollment of 750,000 handicapped preschool-age children in educational and day care programs. This is planned to be accomplished by cooperative activities with the Office of Child Development (the sponsors of Head Start), the expansion of models in the BEH early education program, the provision of leadership training assistance to State-funded preschool programs, and the training of teachers for the handicapped. Also, programs modeled after "Sesame Street" will be developed for television instruction of the handicapped.

In addition, the deaf/blind program, the learning disabilities program, and the R and D program will continue to receive major emphasis in BEH in FY '73. Relating these plans to the Interagency Panel's list of identified research needs, BEH will continue to involve the combined resources of community and State health, welfare, and education agencies for the development of the whole child, will continue training of parents as well as teachers and other school personnel, and will explore the uses of television instruction. The service nature of the Bureau's programs and its use of community resources are likely to result in expanded concern with child advocacy in the future. Thus, the evidence suggests the future BEH research program will become increasingly action-oriented, continuing its tradition of development and demonstration in solving the problems of the handicapped.

Follow Through Program, BESE

The Follow Through Program is presently developing plans for its future operation and detailed information is not yet available. However, assuming the research effort continues along its present lines, we can

expect study of children's learning and effective instructional strategies to continue, along with the development of comprehensive services to benefit the whole child. The role of community health and welfare agencies, environmental influences and parent/family involvement are likely to continue to be of major concern and hence a major focus of study.

The future research-related activities of other BESE programs for young children fall outside the scope of the present report. However, the strong support and heavy influence, particularly of the Title I and Title III programs (ESEA, 1965, as amended), require they be considered in future planning.

Teacher Training Program, BEPD

In FY '73 the BEPD program to train people to teach young children will become part of the Bureau's Teacher Centers program. The number of such Centers concerned with early childhood teachers will depend upon local definition of teacher needs. Some of the present early childhood training projects could become Teacher Centers.

For FY '72, the early childhood program will concentrate on preparing the teacher trainer in early childhood education. The program will support projects that prepare quality teacher trainers as well as those who train the trainers, by improving the teacher education delivery system. This will require institutional changes involving the community, parent participation, program improvement and the development of evaluation and dissemination plans. Assuming that those Teacher Centers concerned with young children will proceed along similar lines in FY '73, some of the outstanding characteristics which will continue are checked in Table 8. Several of the areas checked reflect the special concern of the program to

provide teachers trained to meet the needs of children from low-income families.

Program Planning and Evaluation--OASPE, OE and HSMHA

OASPE's investment in early childhood in FY '73 is contingent upon Departmental plans not yet completed. However, it is likely the major emphasis will continue to be on policy studies, cost-benefit studies and other projects to assist policy and research planning, and on the evaluation of programs of broad social interest, with a special concern for the development, care and education of disadvantaged children. Broad areas which will be the focus of continuing concern in OASPE are checked in Table 8. The Office of Education's Office of Program Planning and Evaluation has not yet determined its FY '73 early childhood research activities. OPPE, HSMHA, has planned two early childhood projects for FY '72, both of which are concerned with improvement in the organization and delivery of health care services. FY '73 plans are not yet determined.

Office of Economic Opportunity

While definite plans for OEO research have not been made for FY '73, they are likely to be concerned with the effect of a variety of social programs on young children. The focus on the development and evaluation of day care programs and the impact of their social, health and educational components will continue to be of major importance.

In addition, future research will bear upon the study of workable alternatives to day care such as income maintenance programs, parent employment programs, and the effect of changes in housing and basic living conditions. Another possible area for study concerns combinations of programs which are likely to benefit children of average-income as

well as low-income families. Study of methodology which will permit "criterion-based" program evaluation is also a major interest. The continuation of OEO research along these lines will make important contributions to a number of areas needing additional study - see Table 8.

Priority Areas Needing Study

From Table 8, which indicates the broad areas of major concern of the agencies for FY '73 research, one of the most obvious trends is that more agencies are planning work in the environmental effects area than they carried out in FY '71 (Table 2). We pointed out in the previous chapter that more of the agencies in FY '71 focused on each of the developmental processes than on the individual environmental or intervention research areas. If we can assume that the involvement of a greater number of agencies is evidence of a greater amount of work, then there will be more of a balance between "process" and "environmental" research in FY '73. (Information on the percentage of research planned in each area for FY '73 is not available as it was for FY '71 - shown in Table 4. Therefore, caution must be used in comparing data for the two years. What we have pointed out is a general trend in the flow of research activity).

Activity is still low in total life space studies, i.e., studies which are concerned with the interrelatedness of factors in the child's surrounding environment, which thus take an ecological view of environmental influences. Projects planned in FY '73 to study individual factors in the primary environment (home, school or neighborhood, and the people and materials found therein) and individual social programs are about equal. There is slightly more attention directed to studies on combinations of more than one social program or more than one primary

TABLE 8

AGENCY PLANS FOR MAJOR RESEARCH EFFORT IN FY 73, KINDS AND AREAS OF RESEARCH [1]

AREAS OF RESEARCH	OCD	NICHD	NIMH	MCHS	SRS	NCERD	BEH	BESE (Follow Through)	BEPD	OASPE	OEO	NO. AGENCIES
Development Processes												
Cognitive Development		X	X			X		X				4
Socio-emotional Dev.		X	X		X	X		X				5
Physical Development		X		X								2
Whole Child					X	X	X				X	4
Environmental Effects												
Primary Environment		X	X			X		X			X	5
Social Programs[2]	X		X	X	X					X	X	6
Child Advocacy	X		X	X	X		X					5
Child Care & Preschool Ed.	X			X	X	X	X	X	X	X	X	9
Family Involvement	X		X	X	X	X	X	X	X			8
Community Involvement	X		X	X	X	X	X	X	X			8
Combined Influences	X	X	X	X		X	X	X			X	8
Life Space			X									1

1. Areas of expected major thrusts are indicated. Descriptions of work at a more detailed level appear in Table 10 (Appendix). Total percentage amounts of work are not yet available for each research area for FY 73. The X marks represent planned expansion of research in a particular area or continuation at a substantial level of activity. The last column shows the number of agencies which plan to give major attention to each area and kind of research in FY 73.

TABLE 8, con't

	OCD	NICHD	NIMH	MCHS	SRS	NCERD	BEH	BESE (Follow-Through)	BEPD	OASPE	OEO	NO. AGENCIES
Research Planning	X		X		X					X		4
Research Dissemination [3]	X	X		X	X		X		X			6
Research Methodology		X		X		X					X	4
Research Population												
Low-income children	X			X	X	X		X	X	X	X	8
Average-income or all children	X	X	X							X		4
Handicapped				X	X		X					3
Individualized Instruction						X		X				2
Television Instruction						X	X					2
KINDS OF RESEARCH												
Basic Research		X	X			X						3
Applied Research	X		X	X	X	X	X	X	X		X	9
Evaluations	X			X	X	X		X		X	X	7
Longitudinal Studies		X			X	X		X			X	5

2. Including day care or child care studies which will benefit low-income children primarily.

3. Of the work recorded, ONLY OCD research includes studies on dissemination of research other than by means of formal training.

influence than on programs or influences studied individually. The bulk of the study of combined influences concerns the primary influences - an area in which the provision of effective comprehensive programs (in day care particularly) has been of growing concern. The National Program on Early Childhood Education in NCERD is planning a major effort to develop, test and demonstrate comprehensive models for the care and education of young children, from infants to eight-year-olds, for the next few years. The study of alternative broad-scale social programs is just getting under way (see the Appendix) and it will be several years before information on the right combinations of social programs for different groups of children will be available.

Research on child advocacy and child care programs (the latter including day care and preschool education) are examples of research on social programs. The fact that 9 out of 11 agencies plan work in the child care area is proof that this area will continue to be of major interest in the next few years. And because child care programs will continue to serve children of low-income families to a large extent, the amount of research related to low-income children will remain at a high level (the research of eight agencies will benefit poor children in FY '73). Research related to child advocacy programs will continue to grow as the field of child advocacy becomes the focus of even greater social concern. Three agencies (OCD, NIMH and OE) have planned FY '73 studies specifically related to child advocacy. Two others, MCHS and SRS, have planned research concerned with the efficient provision of services to children, which is therefore directly related to child advocacy.

The large amounts of work planned to study family and community involvement are a result of major interest in the provision of comprehensive services in day care and child development programs, including preschool education programs for handicapped children. Since there is a growing emphasis in these programs to involve the family and parents in the education and care of their children, there is a concomitant growth in research activity related to parents and family. Further, the provision of comprehensive services, particularly in the programs of BEH, depends upon the cooperation and involvement of a variety of health, education and welfare agencies in the community, and hence research related to community involvement is likely to grow. The expansion of child advocacy programs, since they will draw upon the services of community agencies, will cause an expansion of research involving the community also.

In the study of the developmental processes, the most striking change has been in research on the whole child (as opposed to research on one of the processes, such as cognitive development). Whereas in FY '71 this area was of major concern in only two agencies, four agencies are planning to give major effort to research bearing on the child as a total entity in FY '73. Research is planned by more agencies in the area of social-emotional development than in previous years. In effect, this means that for the first time cognitive development and social-emotional development will receive about equal attention by agencies. Physical development will be supported by two agencies, with the greatest amount of research to be found in NICHD.

The three areas which relate to the research process - planning, dissemination and methodology - remain at relatively low levels in the overall plans for FY '73. It is significant that the four agencies which

plan to give a major emphasis to research which assists planning are different from the agencies which have a major interest in the improvement of research methodology. (Most of the former have been involved primarily in applied research; the latter in basic research - either currently or recently). More study is needed on the development of coordinated goals for child development research and national goals for child development. Most of the dissemination "research" will be in the area of training - either training of school personnel and parents for preschool programs (NCERD, BEH, BEPD) or personnel for medical, health or welfare programs (NICHD, MCHS, SRS). Inasmuch as training courses are only one way to pass on the results of research, studies which focus on other means of disseminating information effectively need to be considered. The informal use of the mass media (print and TV) needs to be investigated as a means of communicating research information. In addition, various means to reach a wider audience including other researchers, legislators and policy makers must be developed.

A related area which needs immediate and extended research, and which is not included by any agency as a priority or problem, is the program multiplier effect. This multiplier effect relates to the problem of moving a program from a proven "model" or "demonstration" to a national program. The issue may be seen as part of research utilization and dissemination but that obscures the problem. Economics, technology, science, and ecology have recognized that a linear increase in inputs does not give you a linear increase in outputs. Usually, it takes an exponential increase in inputs to achieve a linear output. We have seen during the 60's the impact of this factor on Head Start, Follow Through, Job Corps,

Neighborhood Youth Corps, Medicaid, Medicare, and almost all national programs. This raises a basic issue of whether the "modeling" approach is valid and whether evaluated demonstrations are really worthwhile. Most demonstrations succeed, and most demonstrations never become national programs - where this is attempted, the cost increases and the quality of the program decreases.

Research on methodology - on valid ways of conducting and evaluating research - will be of major concern in four agencies. A specific question needing study in this area is the process of conducting projects with the cooperation and understanding of the people involved and affected by the study. Whether the general area needs more support will be considered by the Interagency Panel. The same is true of longitudinal studies. While in FY '71 no agency had over 40% of its work in longitudinal research, five agencies plan to give it substantial support in FY '73.

It has been mentioned that nearly all the agencies plan to conduct research which will be of benefit primarily to children of low-income families. About half will include research which can benefit children of other socio-economic classes, or all children. Four agencies (NIMH, BEH, SRS, MCHS) have special areas of major focus - the physically, emotionally, socially or intellectually handicapped. Additional consideration needs to be given to the question of what is a fair distribution of research among children from a variety of social, economic and cultural backgrounds, including middle-class as well as poor children, and for the benefit of "normal" as well as handicapped children.

Individualized instruction will receive major attention in two agencies in FY '73 (in only one, if the Follow Through development program changes greatly). It is the relatively strongly financed

educational laboratory and R & D center programs of NCERD which are the main support of the studies of individualized instruction. Thus this area will receive substantial attention even though the greatest amount of support will come from one agency. The tremendous potential of television instruction will receive major attention in two agencies. Whether the work of these and other agencies is sufficient remains to be determined.

Finally, Table 8 shows that nine agencies will conduct applied research in FY '73. Two of these will conduct both basic and applied research and six of these will conduct applied research and evaluations. One agency will conduct basic research only and one will conduct only evaluation studies. Thus there is much more applied research and evaluation effort planned for FY '73 than there is basic research. This may be a suitable distribution; however, it is designated as an issue that needs additional consideration by the Interagency Panel. Five agencies will conduct longitudinal studies in FY '73. They will occur in both basic and applied research. Again, whether the planned amount is adequate is a matter for Panel consideration.

To conclude, the major areas of research to be supported by relatively few agencies in FY '73 are studies on alternative social programs (other than child or day care and preschool education programs) and combinations of such programs, physical health and development the whole child, the planning of goals for child development research and research on dissemination other than formal training, on methodology, on television instruction, on individualized instruction, and basic research. The matter of whether these areas in fact do need additional work is one to be taken up by the Panel in the near future. Relatively small amounts

of research do not necessarily mean that the amount of research is inadequate. Rather, more study is needed before decisions can be made in a given area. What is wanted is a proper balance among different kinds and areas of research, which does not necessarily mean an equal amount of support for each. For convenience, areas to be studied by relatively few agencies in FY '73 are listed below in Table 9.

The Appendix lists specific research questions which may be asked within the broad research areas discussed above (and displayed in Table 8) and shows individual agency plans for FY '73. The Appendix can be used as an inventory of examples illustrating how research in broad areas is translated into specific research questions. Used with Tables 8 and 9, information from the Appendix can also provide a more complete picture of the overall FY '73 research "plan." For example, a study of the information given therein shows that in nearly every area listed in Table 9 as one of those most in need of additional investigation, some agency is planning to continue or expand work on an individual research question within that area. (Life space studies, television instruction, research on social programs other than day care, and research to benefit all children are major areas needing study which will not be explored in individual projects to any great extent. The same is true to a lesser degree of basic research, as compared with applied research.)

Thus, the Appendix serves as a double check on and supplement to the information on general plans presented in Tables 8 and 9. Its contents can also be measured against the yardstick of individual questions discussed within broad priority areas in Chapter 1. The detailed information found in the Appendix will be used by the Panel as an aid to guide consideration of the adequacy of planned research in major priority areas.

Table 9

Areas and Kinds of Research in Which Fewer than 5 Agencies Plan to Conduct Major Research in FY 1973* N=11 Agencies

Areas and Kinds of Research	Number of Agencies
Whole child (SRS, NCERD, BEH, OEO)	4
Total life space (NIMH)	1
Alternative social programs, other than child care or preschool programs (OEO, NICHD, SRS)	3
Physical health and development (NICHD, MCHS)	2
Planning of research goals (OCD, NIMH, SRS, NCERD)	4
Research to benefit all children (OCD, NICHD, NIMH, OASPE)	4
Research methodology (NICHD, MCHS, NCERD, OEO)	4
Research dissemination, other than formal training (OCD)	1
Television instruction (BEH, NCERD)	2
Individual instruction (NCERD, Follow Through)	2
Basic research (NICHD, NCERD, NIMH)	3

* The initials in parentheses stand for the agencies which will conduct research in the areas indicated.

IV. Toward the Future: Tasks of the Interagency Panel

We are none of us seers. Yet the business of studying childhood and the needs of children, and especially the business of planning for future research and service concerning children, demands that we sensitize ourselves to the potential societies for which our children are being prepared, and with which they will interact - both shaping and being shaped in the process.

The Interagency Panel members, therefore, have a dual task. As outlined in the preceding chapters, considerable work remains to be done to carry out the research program to which agencies have already committed themselves, and to develop new programs of research in areas considered important, but not yet receiving adequate support. In addition, the Panel members must continue the ongoing process of communication and coordination which has already been so fruitful. These are the short-range goals. But the Panel members have another task, as well: a long-range goal of developing and working within a frame of reference which will permit more rational allocation of research resources. Such an effort will make possible not only increased coordination of research on an interagency basis but will increase knowledge about children in a more systematic way. Some basic steps needed for both short and long-range goals to be reached will be outlined in this Chapter.

Immediate Tasks

Identifying Research Gaps and Imbalances

In the immediate future, the Interagency Panel has several major items on its agenda. First, more specific analysis is needed of

possible gaps in the planned FY '73 research efforts - recognized by measuring planned research activities against the priority areas identified by the Panel members. The preliminary analysis presented in this report has revealed several broad research areas in which relatively little research activity is planned (as shown in Table 9). The Panel members recognize the need for closer examination to determine whether additional amounts of research attention are indeed required in these areas. It is also important to review those areas which appear to be receiving adequate research (judging by the number of agencies providing or expecting to provide support), and to see whether the distribution of work and the patterns of distribution are sufficient to meet real needs. (Similarly, instances of overlap and duplication of effort must be identified.) The next steps will be for the agencies to determine together what can be done to assure a balanced interagency research program, and then to make recommendations to appropriate officials.

Refining and Updating the Interagency Information System

The analysis has not only revealed gaps and duplication of effort, it has strongly implied the need for more detailed coordination of planning. As the Panel members look forward to planning together on a more systematic basis, it is essential that information regarding each agency's research efforts become part of a more refined system than presently exists. An adequate information system is the sine qua non of effective planning. Procedures for collecting and reporting information in a standard fashion need to be developed - procedures which are compatible in every way possible with existing information systems of the member agencies. Scientific methods of

storing, updating and retrieving information must be used. In addition, a conceptual framework for the analysis and interpretation of child development research data is being developed. Panel members are already involved in these activities. To provide assistance and additional information services to the Panel, an Information Secretariat is being established within the Office of Child Development. The Secretariat will provide the means to the agencies most vitally involved in early childhood research to develop a common information system for reporting and analyzing their research. With this, a reliable base will be available to assist the coordination of future planning.

Continuing Analysis of Research Findings and Social Trends

A significant function of the Panel is to assess research needs, based on an evaluation of the status of early childhood research in relation to major social directions and issues. Given the dynamic nature of scientific progress and of social change, the process of determining research needs is an ongoing one, never to be completed. While the major thrust of early childhood research in the near future is likely to remain essentially as it has been outlined in this report, new questions and directions are bound to emerge as old problems are attacked and solved. Continued analysis of research findings, and sensitivity to major social currents will form the basis of the Panel's future determination of research priorities. The newly established Secretariat will provide the back-up work for this effort.

Long-Range Tasks

If future social needs are to be anticipated and met effectively in the field of early childhood research, several inter-

related steps will have to be taken. These include identifying future research needs based on predicted social programs and scientific concerns, and coordinating Federal efforts concerning early childhood research and development with those of non-Federal organizations.

Identifying Future Research Needs Based on Predicted Social Problems and Scientific Knowledge

a. Social Trends. Research interest in the period of early childhood stems from two main sources: a) concern with the early childhood period itself, and a desire to understand its nature and improve its quality; and b) concern with the early childhood period as a formative precursor of later development (whether later childhood, adolescence, or adulthood), and a desire to shape the course of development toward desirable (or away from undesirable) later ends. Planning for research to meet either or both of these goals requires understanding of the kind of society in which children are growing up, and the kind of society in which they, as adults, are likely to live.

We are living in a time of rapid, almost breathtaking social and technical change. In the course of a lifetime, now, there are often as many inventions and alterations in life style and values as there were over many previous generations, and even whole civilizations. The values, beliefs, and child rearing practices appropriate to our own upbringing and the conduct of our lives in contemporary society may well be inappropriate for raising the future adults of the year 2000 and beyond. Although we cannot predict with precision what that future society will be like, it is well to search out the best available opinion and projections, to better understand the social context which will affect and be affected by early childhood research in the future.

Predicting the future depends upon acute perceptions of current trends and countertrends. Thus, it is essential that present social currents and changes be analyzed, particularly those that appear to have a bearing on the character of the child's immediate physical and social environment, or on the social, intellectual, and emotional demands likely to be placed upon him as he grows up. For example, current social trends such as "women's liberation," and the ongoing redefinitions of sex roles in our society; experimentation in alternatives to the nuclear family; the growing acceptance and encouragement of careers for married women; and the shrinking work week (with a greater increase in leisure time) are bound to have profound effects on childrearing practices, and thus on the children themselves and the kinds of adults they subsequently become. Similarly, other social trends, such as a growing emphasis on jobs requiring high verbal and symbol manipulation skills, an increasingly mobile life style (both socially and spatially), rising automation and technologically produced obsolescense of job skills - in combination with a socially and economically produced and encouraged competitiveness - place new demands upon the developing child, who must acquire essential social and intellectual skills as well as the psychological capacity to respond flexibly and self-confidently to rapid change and frequent uncertainty. Still other social trends, such as population growth (and efforts to control it), growing ecological awareness, changing patterns and attitudes toward race relations, and the ease and speed of communications (especially through the mass media) are all bound to make their mark on our evolving society and the children who grow up in it. Once such major trends and their potential contribution to the future character of our nation have been systematically explored,

essential long-range social issues, and goals relevant to child development research can then be more readily identified and developed.

b. Knowledge Trends. Another area bearing on future research needs concerns the present and future state of knowledge and methodology in the scientific disciplines relevant to early childhood research, including for example, psychology, anthropology or research methodology. A critical determinant of research and development priorities is the state of the arts in these fields. Basically this means that regardless of the importance of certain scientific and social questions for the well-being of children, they cannot be answered unless the state of scientific knowledge and technology is sufficiently sophisticated. At the same time, it means that the kinds of questions likely to be asked (and answered) by research scientists are those addressed to areas already being explored by members of the research community. In other words, researchers are likely to be attracted to "hot" areas where previous work has already yielded "breakthroughs," regardless of the social relevance of these areas. A third implication is that the likelihood of "payoff," whether in new information or in socially applicable findings, or both, is greatest in those areas in which an appreciable body of knowledge and theory has already been built up.

Thus, whatever issues are identified by the Panel as essential for early childhood research, it will also be necessary to discover how well these fit with current and future scientific capabilities. Realistic research objectives will reflect a thoughtful assessment and intermeshing of social and technological trends and needs.

Providing for a Broad Exchange of Information

The establishment of the Office of Child Development and the

creation of the Interagency Panel on Early Childhood Research and Development has helped to create new avenues for communication and coordination among Federal agencies sharing a common research interest in the early childhood years. Other communication linkages need to be forged as well, some of which are suggested here. The mechanisms by which they can be established will have to be determined out of more extensive deliberation by the Panel members.

If we identify the major components of the early childhood research and development system within our country, we find there are several: the research sponsors (both Federal and non-Federal), the research scientists (both basic and applied), the child-oriented practitioners who use research results (teachers, physicians, caretakers, parents), and the eventual beneficiaries - children and their families. Although all of these parts are interrelated, there is normally minimal communication from one component of the system to another (say, between research scientists and practitioners, or between parents and the individuals responsible for planning and carrying out research which might pertain to their children, or between Federal and non-Federal research sponsors).

The last groups, for example, Federal and non-Federal research sponsors, do not normally plan together efforts which might affect a common group of scientists or research subjects. A starting point for improved communication in this area, therefore, is for the Panel systematically to examine non-Federal research efforts in the field of early childhood development to determine areas of focus, and increasingly to relate these efforts to Federal planning and activities in the same field. Subsequently, liaisons can be built with research

groups outside of the Federal government through conferences, position papers, and other means to be determined - perhaps through research. At some point in the future, the means to provide for the effective dissemination and exchange of information over a broad range of users will be worked out by the Panel with the aid of the Secretariat.

The task of the Interagency Panel is to deal with the above goals so that the children of the Nation will benefit by the most effective allocation of Federal resources, which will yield the most relevant research information about the development of young children.

Appendix

Agency Plans for Early Childhood Research in FY '73

Examples of
Research Questions Which Will Be
Studied by Federal Agencies

Key

* = Same level of activity in FY '73

0 = No activity in FY '73

+ = More activity in FY '73

L = Less activity in FY '73

I. The Developmental Process

A. The Development of Cognitive Ability	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
1. Generalization of knowledge and skills and application to new situations	*	*	*	0	0	+	0	0	1
2. Resolve discrepancies between theories of cognitive development	*	*	*	0	0	+	0	0	1
3. Cognitive skills development in infancy	*	+	*	0	0	+	0	L	2
4. Curriculum for cognitive skills development	*	0	*	0	0	*	0	*	0
5. Physiological underpinnings of cognitive development	0	*	*	0	0	0	0	0	0
6. Nature of learning styles	0	*	*	0	0	+	0	*	1
7. Reading and ethnic differences	*	0	*	0	0	*	0	*	0

I. The Developmental Process, cont.

B. Social and Emotional Development	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
1. When children become attached to others, to whom and how intensely	0	*	*	0	*	*	0	L	0
2. How children's imitation and play affect the formation of self-image and social identity	0	0	+	*	0	0	0	L	1
3. How cultural and subcultural variations within our own country affect differences in children; their effect on adjustment to the dominant culture	0	0	*	0	*	0	*	L	0
4. Natural development of children's moral and ethical behavior	+	*	+	0	0	L	0	0	2
5. Motivation	*	*	+	0	+	+	0	L	3
6. Intervention strategies for infants	+	0	+	*	0	+	0	*	3
7. Social and educational effects of busing	0	0	0	0	0	0	0	0	0
8. Development and prevention of racism	+	*	*	0	0	0	0	0	1
9. Detection and treatment of mental illness	+	0	+	*	0	+	0	0	3

I. The Developmental Process, cont.

C. Physical Development	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
1. Genetic and maternal-environmental events affecting fetal development	L	+	*	+	0	0	0	0	2
2. Causes of premature birth and birth defects; infant mortality	0	+	0	+	0	0	0	0	2
3. Effects of maternal and child nutrition on pre and post-natal child development	+	+	L	*	0	0	*	*	2
4. Studies associating childhood diseases with the child's own life space	0	0	*	0	0	0	0	0	0
5. Effect of maternal drug abuse on newborn children	0	0	0	+	0	0	0	0	1
6. Physical education and recreation for handicapped children	0	0	0	0	0	*	0	0	0

II. Effect of Primary Environmental Influences

	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
A. Effect of urban, suburban or rural life on the young child	*	+	0	0	0	0	0	+	2
B. Specification of what ghetto and slum living means to children's physical and mental development	*	*	*	*	*	0	0	*	0
C. How global environmental variables are mediated to the child through more proximal agents	*	+	+	0	*	0	0	*	2
D. How family characteristics (e.g. size, stability, cultural values) affect child development	+	+	+	+	+	0	0	0	5
E. Changing role of the family in U. S. society and its effects on children	0	*	+	0	0	0	0	0	1
F. Impact on children of the formal learning situation of the schools compared with learning at home	L	0	*	0	0	+	0	+	2
G. Interventions for promoting stable family life	+	0	*	0	+	0	0	0	2
H. Individualized and diagnostic instruction	0	0	*	0	0	+	0	*	1
I. Long-term demonstration of individulization principles with high probability of successfully raising achievement scores	*	+	+	0	0	+	0	*	3

III. The Effect of Community and Broader Social Programs

	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
A. Impact of day care experiences -- for better or worse -- on child development	+	0	+	+	0	+	*	+	5
B. How various amounts of separation from home affect children of different ages	0	*	0	0	0	L	0	+	1
C. Effects of parent involvement on day care and preschool education	+	0	0	0	*	+	0	+	3
D. Training needs for day care staff	+	0	0	+	L	+	*	+	4
E. Long-range effects of various day care and preschool program characteristics	+	0	0	0	0	+	*	+	3
F. Impact of day care health services	+	0	0	+	0	+	*	0	3
G. Impact of maternal and child health programs	0	0	*	*	0	+	*	0	1
H. Impact of programs for handicapped and mentally retarded children	0	0	0	*	0	+	0	0	1
I. Innovation in the delivery of nutritional and health care	+	0	0	+	0	+	*	0	3

III. The Effect of Community and Broader Social Programs, cont.

	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
J. Coordination of medical services	+	0	0	*	0	+	*	*	2
K. Studies of effective program elements in Head Start, Follow Through, compensatory education programs	*	0	*	0	0	*	*	+	1
L. Training methods which will make effective skills available to early childhood teachers	+	0	*	0	0	+	*	*	2
M. Training methods which will make effective child-rearing and instructional skills available to parents	+	0	*	0	0	+	*	*	2
N. Follow-up programs for studies of earlier preschool programs	*	0	+	0	0	*	0	0	1
O. Alternatives to day care and compensatory education programs							*		
1. Parents as teachers	+	0	*	0	0	+		+	3
2. Older children as teachers	+	0	0	0	0	+		0	2

III. The Effect of Community and Broader Social Programs, cont.

	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
3. Training teens for parenthood	+	0	*	0	0	0		0	1
4. Combination of home and day care centers	+	0	*	0	0	+		+	3
5. Effects of parental income maintenance on children	0	0	0	0	*	0	*	+	1
6. Impact of employment programs for parents on child development	0	0	0	0	+	0	*	+	2
P. Effects on children of housing programs	0	0	0	0	0	0	0	+	1
Q. Effects on children of basic changes other than above in living conditions	0	+	*	0	*	0	0	+	2
R. Effects and effectiveness of television as a medium of instruction	*	0	*	0	0	+	+	0	2
S. Child advocacy programs	*	+	+	0	+	+	+	0	5

IV. The Global Approach and Combined and Comparative Effects

	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
A. Whole child, i.e., the child as a total entity	0	+	+	0	*	+	*	L	3
B. Total life space; ecological studies	0	+	+	0	L	L	*	L	2
C. Comprehensive programs or settings (effects of combinations of elements in primary environment)	+	+	+	0	+	+	*	*	5
1. Comprehensive, validated child care and education models for infants	*	0	+	0	0	+	*	*	2
2. Comprehensive, validated child care and education models for toddlers	*	0	+	0	0	+	*	*	2
3. Comprehensive, validated child care and education models for preschool-age-children	*	0	+	0	L	+	*	*	2
4. Comprehensive, validated child care and education models for elementary school-age children	*	0	+	0	0	+	*	0	2
D. Combined and/or comparative effects of social programs	0	0	+	0	+	0	+	*	3

V. Research to Benefit all Children

	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
A. What is a fair distribution of funds for child development and child development research across socio-economic levels and cultural backgrounds	0	0	0	0	0	0	0	*	0
B. What works in education and family care for middle class children	0	0	0	0	0	*	0	0	0
C. What works in education and family care for the bright and able (gifted) child	0	0	0	0	0	*	0	0	0
D. Which different combinations of programs will benefit children with different backgrounds and home environments	+	0	0	0	0	+	*	+	3
E. Negative consequences for minority children of the manner in which special services are delivered	0	*	0	0	+	*	*	*	1
F. Measures of adaptive behavior which take into consideration the unique life style and culture of different ethnic and social groups	+	L	*	0	*	*	*	*	1
G. Curricula for specific kinds of various ethnic groups	*	0	0	0	0	*	0	0	0

VI. Research on Methodology

	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
A. Program evaluation procedures for analyzing complex situations containing many variables	*	0	+	0	+	*	*	*	2
B. Program evaluation methods which measure the relation of specific inputs to performance	*	0	+	+	0	+	*	+	4
C. Systems insure that the criteria used to measure success are relevant to program characteristics	*	0	*	0	+	+	*	*	2
D. The refinement and development of techniques of carrying out behavioral observations in natural on-going situations	+	0	+	0	0	+	0	*	3
E. Methodology of longitudinal research	*	*	+	+	0	+	*	0	3
F. Improving measures of young children and infants	+	*	*	0	0	*	0	*	1

VII. Study of Research Planning and Dissemination

	OCD	NICHD	NIMH	MCHS	SRS	OE	OASPE	OEO	Number Agencies Planning Increase
A. Conferences or studies relating to Federal research goals	+	0	+	0	+	+	*	L	4
B. Studies of goals for child development	0	0	+	0	0	*	*	L	1
C. Studies of diffusion, dissemination and utilization of research results	+	0	+	0	+	*	*	L	3